Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of InterDigital, Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of InterDigital, Inc. and its subsidiaries (the "Company") as of December 31, 2022 and 2021, and the related consolidated statements of income, of comprehensive income, of shareholders' equity and of cash flows for each of the three years in the period ended December 31, 2022, including the related notes and financial statement schedule listed in the accompanying index (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control- Integrated Framework* (2013) issued by the COSO**.**

Changes in Accounting Principles

As discussed in Note 2 to the consolidated financial statements, the Company changed the manner in which it accounts for convertible instruments in 2021.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Annual Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed 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. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Revenue Recognition – Determination of the Value of Revenue from Non-Financial Sources and of Standalone Selling Prices of Identified Performance Obligations in Dynamic Fixed-Fee License Agreements

As described in Notes 2 and 3 to the consolidated financial statements, dynamic fixed-fee license agreements include fixed, non-refundable royalty payments that fulfill the licensee's obligations to the Company under a patent license agreement for a specified time period or for the term of the agreement. Additionally, certain patent license agreements contain revenue from non-financial sources in the form of patents received from the customer. Total fixed-fee royalty revenue and noncurrent patent royalties were $364.0 million and $53.9 million, respectively, for the year ended December 31, 2022, of which a significant portion relates to dynamic fixed-fee agreements. As disclosed by management, the process for determining the value of the standalone selling prices of identified performance obligations in dynamic fixed-fee license agreements requires the exercise of significant judgment when evaluating the valuation methods and assumptions, including the assumed royalty rates, projected sales volumes, discount rate, identification of comparable market transactions which are not directly observable and other relevant factors. Management's process for determining the value of revenue from non-financial sources requires estimating the fair value of patents received using one of, or a combination of, an analysis of comparable market transactions (the market approach), a discounted cash flow analysis (the income approach), and/or by quantifying the amount of money required to replace the future service capability of the assets (the cost approach). The development of a number of these inputs and assumptions requires a significant amount of management judgment and is based upon a number of factors, including identification of comparable market transactions, assumed royalty rates, projected sales volumes, economic lives of the patents and other relevant factors.

The principal considerations for our determination that performing procedures relating to the determination of the value of revenue from non-financial sources and of standalone selling prices of identified performance obligations in dynamic fixed-fee license agreements is a critical audit matter are (i) the significant judgment by management when determining the value of revenue from non-financial sources and of standalone selling prices; (ii) a high degree of auditor judgment, subjectivity and effort in performing procedures and evaluating audit evidence obtained relating to management's significant assumptions related to (a) assumed royalty rates, projected sales volumes and identification of comparable market transactions used to estimate the value of revenue from standalone selling prices and (b) identification of comparable market transactions used to estimate the value of revenue from non-financial sources; and (iii) the audit effort involved the use of professionals with specialized skill and knowledge.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the revenue recognition process, including controls over the determination of the value of revenue from non-financial sources and of standalone selling prices of identified performance obligations in dynamic fixed-fee license agreements. These procedures also included, among others (i) reading certain new dynamic fixed-fee license agreements entered into during the year; (ii) testing management's process for determining the value of revenue from non-financial sources and of standalone selling prices of identified performance obligations in dynamic fixed-fee license agreements; (iii) evaluating the appropriateness of the valuation methods used; (iv) evaluating the reasonableness of management's significant assumptions used in determining the value of revenue from non- financial sources and developing the standalone selling prices related to assumed royalty rates, projected sales volumes and identification of comparable market transactions; and (v) testing the completeness and accuracy of data used by management in the valuation methods. Evaluating the reasonableness of management's significant assumptions related to assumed royalty rates and identification of comparable market transactions involved considering prospective third-party market data and previous license agreements entered into by the Company. Evaluating the reasonableness of management's significant assumptions related to projected sales volumes involved considering consistency with historical sales data. Professionals with specialized skill and knowledge were used to assist in the evaluation of the valuation methods and the significant assumption related to the identification of comparable market transactions used to estimate the value of revenue from non-financial sources.

/s/ PricewaterhouseCoopers LLP

Philadelphia, Pennsylvania
February 15, 2023

We have served as the Company's auditor since 2002.

INTERDIGITAL, INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(in thousands, except per share data)

	DECEMBER 31, 2022	DECEMBER 31, 2021
ASSETS		
CURRENT ASSETS:		
Cash and cash equivalents	$ 693,479	$ 706,282
Short-term investments	508,298	235,345
Accounts receivable, less allowances of $0 and $322	53,182	31,113
Prepaid and other current assets	89,716	77,545
Total current assets	1,344,675	1,050,285
PROPERTY AND EQUIPMENT, NET	11,338	13,377
PATENTS, NET	353,999	363,585
DEFERRED TAX ASSETS	94,373	98,408
OTHER NON-CURRENT ASSETS, NET	95,720	102,501
	555,430	577,871
TOTAL ASSETS	$ 1,900,105	$ 1,628,156
LIABILITIES AND SHAREHOLDERS' EQUITY		
CURRENT LIABILITIES:		
Accounts payable	$ 9,997	$ 7,155
Accrued compensation and related expenses	38,400	32,638
Deferred revenue	189,059	291,673
Dividend payable	10,384	10,741
Other accrued expenses	23,506	29,354
Total current liabilities	271,346	371,561
LONG-TERM DEBT	607,066	422,745
LONG-TERM DEFERRED REVENUE	237,580	19,463
OTHER LONG-TERM LIABILITIES	53,600	61,470
TOTAL LIABILITIES	1,169,592	875,239
COMMITMENTS AND CONTINGENCIES		
SHAREHOLDERS' EQUITY:		
Preferred stock, $0.10 par value, 14,399 shares authorized, 0 shares issued and outstanding	—	—
Common stock, $0.01 par value, 100,000 shares authorized, 71,923 and 71,720 shares issued and 29,668 and 30,689 shares outstanding	719	717
Additional paid-in capital	717,102	713,599
Retained earnings	1,492,046	1,441,105
Accumulated other comprehensive loss	(916)	(571)
	2,208,951	2,154,850
Treasury stock, 42,255 and 41,031 shares of common held at cost	1,484,056	1,409,611
Total InterDigital, Inc. shareholders' equity	724,895	745,239
Noncontrolling interest	5,618	7,678
Total equity	730,513	752,917
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	$ 1,900,105	$ 1,628,156

The accompanying notes are an integral part of these statements.

INTERDIGITAL, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF INCOME
(in thousands, except per share data)

	FOR THE YEAR ENDED DECEMBER 31,		
	2022	**2021**	**2020**
REVENUES	$ 457,794	$ 425,409	$ 358,991
OPERATING EXPENSES:			
Research and portfolio development	185,202	200,484	204,360
Licensing	71,419	64,625	50,464
General and administrative	47,377	61,217	48,999
Restructuring activities	3,280	27,877	—
Total Operating expenses	307,278	354,203	303,823
Income from operations	150,516	71,206	55,168
INTEREST EXPENSE	(29,496)	(25,225)	(40,799)
OTHER (EXPENSE) INCOME, NET	(3,457)	11,575	16,924
Income before income taxes	117,563	57,556	31,293
INCOME TAX (PROVISION) BENEFIT	(25,502)	(15,368)	6,648
NET INCOME	$ 92,061	$ 42,188	$ 37,941
Net loss attributable to noncontrolling interest	(1,632)	(13,107)	(6,860)
NET INCOME ATTRIBUTABLE TO INTERDIGITAL, INC.	$ 93,693	$ 55,295	$ 44,801
NET INCOME PER COMMON SHARE — BASIC	$ 3.11	$ 1.80	$ 1.46
WEIGHTED AVERAGE NUMBER OF COMMON SHARES OUTSTANDING — BASIC	30,106	30,764	30,776
NET INCOME PER COMMON SHARE — DILUTED	$ 3.07	$ 1.77	$ 1.44
WEIGHTED AVERAGE NUMBER OF COMMON SHARES OUTSTANDING — DILUTED	30,485	31,253	31,058
CASH DIVIDENDS DECLARED PER COMMON SHARE	$ 1.40	$ 1.40	$ 1.40

The accompanying notes are an integral part of these statements.

INTERDIGITAL, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(in thousands)

	For the Year Ended December 31,		
	2022	**2021**	**2020**
Net income	$ 92,061	$ 42,188	$ 37,941
Unrealized loss on investments, net of tax	(345)	(387)	(110)
Comprehensive income	$ 91,716	$ 41,801	$ 37,831
Comprehensive loss attributable to noncontrolling interest	(1,632)	(13,107)	(6,860)
Total comprehensive income attributable to InterDigital, Inc.	$ 93,348	$ 54,908	$ 44,691

The accompanying notes are an integral part of these statements.

INTERDIGITAL, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY
(in thousands, except per share data)

	Common Stock		Additional Paid-In Capital	Retained Earnings	Accumulated Other Comprehensive Loss	Treasury Stock		Non-Controlling Interest	Total Shareholders' Equity
	Shares	Amount				Shares	Amount		
BALANCE, DECEMBER 31, 2019	**71,268**	**$ 712**	**$ 727,402**	**$ 1,412,779**	**$ (74)**	**40,567**	**$ (1,379,262)**	**$ 24,724**	**$ 786,281**
Net income attributable to InterDigital, Inc.	—	—	—	44,801	—	—	—	—	44,801
Proceeds from and increases in noncontrolling interests	—	—	—	—	—	—	—	5,333	5,333
Net loss attributable to noncontrolling interest	—	—	—	—	—	—	—	(6,860)	(6,860)
Net change in unrealized loss on short-term investments	—	—	—	—	(110)	—	—	—	(110)
Dividends declared ($1.40 per share)	—	—	498	(43,611)	—	—	—	—	(43,113)
Exercise of common stock options	49	1	1,891	—	—	—	—	—	1,892
Issuance of common stock, net	72	1	(1,752)	—	—	—	—	—	(1,751)
Amortization of unearned compensation	—	—	10,442	—	—	—	—	—	10,442
Repurchase of common stock	—	—	—	—	—	6	(349)	—	(349)
BALANCE, DECEMBER 31, 2020	**71,389**	**$ 714**	**$ 738,481**	**$ 1,413,969**	**$ (184)**	**40,573**	**$ (1,379,611)**	**$ 23,197**	**$ 796,566**
Adjustment related to the adoption of ASU 2020-06	—	—	(55,349)	15,587	—	—	—	—	(39,762)
Net income attributable to InterDigital, Inc.	—	—	—	55,295	—	—	—	—	55,295
Net loss attributable to noncontrolling interest	—	—	—	—	—	—	—	(13,107)	(13,107)
Proceeds from and increases in noncontrolling interests	—	—	—	—	—	—	—	100	100
Noncontrolling interest distribution	—	—	—	—	—	—	—	(2,512)	(2,512)
Net change in unrealized loss on short-term investments	—	—	—	—	(387)	—	—	—	(387)
Dividends declared ($1.40 per share)	—	—	734	(43,746)	—	—	—	—	(43,012)
Exercise of common stock options	157	1	7,949	—	—	—	—	—	7,950
Issuance of common stock, net	174	2	(6,952)	—	—	—	—	—	(6,950)
Amortization of unearned compensation	—	—	28,736	—	—	—	—	—	28,736
Repurchase of common stock	—	—	—	—	—	458	(30,000)	—	(30,000)
BALANCE, DECEMBER 31, 2021	**71,720**	**$ 717**	**$ 713,599**	**$ 1,441,105**	**$ (571)**	**41,031**	**$ (1,409,611)**	**$ 7,678**	**$ 752,917**
Net income attributable to InterDigital, Inc.	—	—	—	93,693	—	—	—	—	93,693
Net loss attributable to noncontrolling interest	—	—	—	—	—	—	—	(1,632)	(1,632)
Noncontrolling interest distribution	—	—	—	—	—	—	—	(1,928)	(1,928)
Non-controlling interest contributions	—	—	—	—	—	—	—	1,500	1,500
Net change in unrealized loss on short-term investments	—	—	—	—	(345)	—	—	—	(345)
Dividends declared ($1.40 per share)	—	—	803	(42,752)	—	—	—	—	(41,949)
Exercise of common stock options	24	—	1,226	—	—	—	—	—	1,226
Issuance of common stock, net	179	2	(6,259)	—	—	—	—	—	(6,257)
Amortization of unearned compensation	—	—	22,127	—	—	—	—	—	22,127
Repurchase of common stock	—	—	—	—	—	1,224	(74,445)	—	(74,445)
Net convertible note hedge transactions, net of tax	—	—	(54,257)	—	—	—	—	—	(54,257)
Net warrant transactions	—	—	39,863	—	—	—	—	—	39,863
BALANCE, DECEMBER 31, 2022	**71,923**	**$ 719**	**$ 717,102**	**$ 1,492,046**	**$ (916)**	**42,255**	**$ (1,484,056)**	**$ 5,618**	**$ 730,513**

The accompanying notes are an integral part of these statements

INTERDIGITAL, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	FOR THE YEAR ENDED DECEMBER 31,		
	2022	2021	2020
CASH FLOWS FROM OPERATING ACTIVITIES:			
Net income	$ 92,061	$ 42,188	$ 37,941
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	78,571	78,193	81,041
Non-cash interest expense, net	1,645	6,867	18,093
Non-cash change in fair value	1,686	(7,649)	(5,588)
Change in deferred revenue	85,403	(16,868)	24,397
Deferred income taxes	18,518	(7,503)	(7,182)
Share-based compensation	22,127	28,736	10,442
Loss on extinguishment of debt	11,190	—	—
Loss on disposal of assets	—	—	7,539
Impairment of assets	2,427	13,228	—
Other	—	—	412
(Increase) decrease in assets:			
Receivables	(22,069)	(15,103)	11,354
Deferred charges and other assets	(13,453)	(9,894)	(26,256)
Increase (decrease) in liabilities:			
Accounts payable	6,868	(1,803)	(2,850)
Accrued compensation and other expenses	1,065	20,000	14,124
Net cash provided by operating activities	286,039	130,392	163,467
CASH FLOWS FROM INVESTING ACTIVITIES:			
Purchases of short-term investments	(532,724)	(527,800)	(529,559)
Sales of short-term investments	260,771	744,353	256,726
Purchases of property and equipment	(3,156)	(2,511)	(11,793)
Capitalized patent costs	(39,597)	(33,416)	(30,615)
Acquisition of patents	—	(2,350)	—
Proceeds from sale of business	—	—	910
Long-term investments	—	1,363	4,285
Net cash (used in) provided by investing activities	(314,706)	179,639	(310,046)
CASH FLOWS FROM FINANCING ACTIVITIES:			
Proceeds from issuance of convertible senior notes	460,000	—	—
Purchase of convertible bond hedge	(80,500)	—	—
Proceeds from issuance of warrants	43,700	—	—
Payments on long-term debt	(282,499)	—	(94,909)
Proceeds from bond hedge unwind	11,851	—	—
Payment for warrant unwind	(3,837)	—	—
Payments of debt issuance costs	(9,829)	—	—
Repurchase of common stock	(74,445)	(30,000)	(349)
Net proceeds from exercise of stock options	1,226	7,950	1,892
Non-controlling interest contribution	1,500	100	5,333
Non-controlling interest distribution	—	(2,512)	—
Taxes withheld upon restricted stock unit vestings	(6,257)	(6,950)	(1,751)
Dividends paid	(42,306)	(43,058)	(43,072)
Net cash provided by (used in) financing activities	18,604	(74,470)	(132,856)
NET (DECREASE) INCREASE IN CASH, CASH EQUIVALENTS AND RESTRICTED CASH	(10,063)	235,561	(279,435)
CASH, CASH EQUIVALENTS AND RESTRICTED CASH, BEGINNING OF PERIOD	713,224	477,663	757,098
CASH, CASH EQUIVALENTS AND RESTRICTED CASH, END OF PERIOD	$ 703,161	$ 713,224	$ 477,663

Refer to Note 1, "Background and Basis of Presentation," for additional supplemental cash flow information. Additionally, refer to Note 5, "Cash, Cash Equivalents, Restricted Cash and Marketable Securities" for a reconciliation to the consolidated balance sheets.

The accompanying notes are an integral part of these statements.

INTERDIGITAL, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
December 31, 2022

1. BACKGROUND AND BASIS OF PRESENTATION

InterDigital designs and develops advanced technologies that enable and enhance wireless communications and capabilities. Since our founding in 1972, our engineers have designed and developed a wide range of innovations that are used in digital cellular and wireless products and networks, including 2G, 3G, 4G, 5G and IEEE 802-related products and networks, as well as video processing, coding and display technology. We are a leading contributor of innovation to the wireless communications industry, as well as a leading holder of patents in the video industry.

Principles of Consolidation

The accompanying consolidated financial statements include all of our accounts and all entities in which we have a controlling interest and/or are required to be consolidated in accordance with the Generally Accepted Accounting Principles in the United States ("GAAP"). All significant intercompany accounts and transactions have been eliminated in consolidation.

In determining whether we are the primary beneficiary of a variable interest entity and therefore required to consolidate, we apply a qualitative approach that determines whether we have both the power to direct the economically significant activities of the entity and the obligation to absorb losses of, or the right to receive benefits from, the entity that could potentially be significant to that entity. These considerations impact the way we account for our existing collaborative relationships and other arrangements. We continuously assess whether we are the primary beneficiary of a variable interest entity as changes to existing relationships or future transactions may result in us consolidating or deconsolidating our partner(s) to collaborations and other arrangements.

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities as of the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from these estimates. If different assumptions were made or different conditions had existed, our financial results could have been materially different.

The Company has analyzed the impact of the ongoing Coronavirus pandemic ("COVID-19") on its financial statements as of December 31, 2022. The Company has determined that the changes to its significant judgments and estimates as a result of COVID-19 did not have a material impact on its financial statements. The potential impact of COVID-19 will continue to be analyzed going forward.

Reclassifications

Certain reclassifications have been made to prior year amounts to conform to the current year presentation.

During 2022, the Company made reclassifications between the operating expenses lines on the consolidated income statement in order to more clearly reflect the Company's investments to create and protect the value of our innovations. The Company grouped research and portfolio related costs within the line "*Research and portfolio development*", previously referred to as "Development", which resulted in reclassifying certain portfolio related costs out of the "*Licensing*" line, previously referred to as "*Patent administration and licensing*", and into "*Research and portfolio development.*" The impact of this reclassification was $110.9 million, $111.1 million, and $119.7 million for the twelve months ended December 31, 2022, 2021, and 2020, respectively. Additionally, the previous "Selling, general, and administrative" line is now referred to as "General and administrative".

Supplemental Cash Flow Information

The following table presents additional supplemental cash flow information for the year ended December 31, 2022, 2021 and 2020 (in thousands):

	FOR THE YEAR ENDED DECEMBER 31,		
SUPPLEMENTAL CASH FLOW INFORMATION:	**2022**	**2021**	**2020**
Interest paid	$ 13,429	$ 8,000	$ 8,712
Income taxes paid, including foreign withholding taxes	6,805	23,091	26,233
Non-cash investing and financing activities:			
Dividend payable	10,384	10,741	10,786
Accrued debt issuance costs	100	—	—
Non-cash acquisition of patents	30,100	—	33,300
Non-cash distribution of patents	1,928	—	—
Right-of-use assets obtained in exchange of operating lease liabilities	6,644	739	2,524
Accrued capitalized patent costs and property and equipment	4,026	2,021	(436)

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES AND NEW ACCOUNTING GUIDANCE

Foreign Currency Translation

The functional currency of substantially all of the Company's wholly-owned subsidiaries is the U.S. dollar. Certain subsidiaries have monetary assets and liabilities that are denominated in a currency that is different than the functional currency. The gains and losses resulting from this remeasurement and translation of monetary assets denominated in a currency that is different than the functional currency are reflected in the determination of net income.

Cash, Cash Equivalents, Restricted Cash and Marketable Securities

We classify all highly liquid investment securities with original maturities of three months or less at date of purchase as cash equivalents. Cash that is held for a specific purpose and therefore not available to the Company for immediate or general business use is classified as restricted cash. Our investments are comprised of mutual and exchange traded funds, commercial paper, United States and municipal government obligations and corporate securities. Management determines the appropriate classification of our investments at the time of acquisition and re-evaluates such determination at each balance sheet date.

As of December 31, 2022 and 2021, the majority of our marketable securities have been classified as available-for-sale and are carried at fair value, with unrealized gains and losses reported net-of-tax as a separate component of shareholders' equity. Substantially all of our investments are investment grade government and corporate debt securities that have maturities of less than two years, and we have both the ability and intent to hold the investments until maturity.

Other-than-Temporary Impairments

We review our investment portfolio during each reporting period to determine whether there are identified events or circumstances that would indicate there is a decline in the fair value that is considered to be other-than-temporary. For non-public investments, if there are no identified events or circumstances that would have a significant adverse effect on the fair value of the investment, then the fair value is not estimated. If an investment is deemed to have experienced an other-than-temporary decline below its cost basis, we reduce the carrying amount of the investment to its quoted or estimated fair value, as applicable, and establish a new cost basis for the investment. We charge the impairment to the "*Other (expense) income, net*" line of our consolidated statements of income.

Intangible Assets

Patents

We capitalize external costs, such as filing fees and associated attorney fees, incurred to obtain issued patents and patent license rights. We expense costs associated with maintaining and defending patents subsequent to their issuance in the period incurred. We amortize capitalized patent costs for internally generated patents on a straight-line basis over 10 years, which represents the estimated useful lives of the patents. The ten-year estimated useful life for internally generated patents is based on our assessment of such factors as: the integrated nature of the portfolios being licensed, the overall makeup of the portfolio over time, and the length of license agreements for such patents. The estimated useful lives of acquired patents and patent rights, however, have been and will continue to be based on a separate analysis related to each acquisition and may differ from the estimated useful lives of internally generated patents. The average estimated useful life of acquired patents is 9.7 years. We assess the potential impairment to all capitalized net patent costs when events or changes in circumstances indicate that the carrying amount of our patent portfolio may not be recoverable.

Goodwill

Goodwill is recorded as the difference, if any, between the aggregate consideration paid for an acquisition and the fair value of the net tangible and identified intangible assets acquired under a business combination. We review impairment of goodwill annually on the first day of the fourth quarter or if circumstances indicate a triggering event has occurred. We first assess qualitative factors to determine whether it is more likely than not that the fair value of our one reporting unit is less than its carrying amount as a basis for determining whether a quantitative goodwill impairment test is necessary. If we conclude it is more likely than not that the fair value of the reporting unit exceeds its carrying amount, we need not perform the quantitative assessment.

If based on the qualitative assessment we believe it is more likely than not that the fair value of the reporting unit is less than its carrying value, a quantitative assessment test is required to be performed. This assessment requires us to compare the fair value of our reporting unit to its carrying value including allocated goodwill. We determine the fair value of our reporting units generally using a combination of the income and market approaches. The income approach is estimated through the discounted cash flow method based on assumptions about future conditions such as future revenue growth rates, new product and technology introductions, gross margins, operating expenses, discount rates, future economic and market conditions, and other assumptions. The market approach estimates the fair value of our equity by utilizing the market comparable method which is based on revenue multiples from comparable companies in similar lines of business. If the carrying value of our reporting unit exceeds the reporting unit’s fair value, a goodwill impairment charge will be recorded for the difference up to the carrying value of goodwill.

The carrying value of goodwill was $22.4 million as of December 31, 2022 and December 31, 2021, which was included within "*Other non-current assets, net*" in the consolidated balance sheets. No impairments were recorded during 2022, 2021 or 2020 as a result of our annual goodwill impairment assessment.

Property and Equipment

Property and equipment are stated at cost, less depreciation, amortization and impairments. Depreciation and amortization of property and equipment are provided using the straight-line method. The estimated useful lives for computer equipment, computer software, engineering and test equipment and furniture and fixtures are generally three to five years. Leasehold improvements are amortized over the lesser of their estimated useful lives or their respective lease terms, which are generally five to ten years. Buildings are being depreciated over twenty-five years. Expenditures for major improvements and betterments are capitalized, while minor repairs and maintenance are charged to expense as incurred. Upon the retirement or disposition of property, plant and equipment, the related cost and accumulated depreciation or amortization are removed, and a gain or loss is recorded.

Leases

We determine if an arrangement is a lease at inception. Operating lease right-of-use assets represent our right to use an underlying asset for the lease term and lease liabilities represent our obligation to make lease payments arising from the lease. Operating lease right-of-use assets and liabilities are recognized at commencement date, except short-term leases with an original term of 12 months or less, based on the present value of lease payments over the lease term. As most of our leases do not provide an implicit rate, we generally use an incremental borrowing rate based on the estimated rate of interest for collateralized borrowing over a similar term of the lease payments at commencement date. The operating lease right-of-use assets also includes any lease payments made and excludes lease incentives. Lease expense is recognized over the expected term on a straight-line basis. Leases with a lease term of 12 months or less are accounted for using the practical expedient which allows for straight-line rent expense over the remaining term of the lease.

Internal-Use Software Costs

We capitalize costs associated with software developed for internal use that are incurred during the software development stage. Such costs are limited to expenses incurred after management authorizes and commits to a computer software project, believes that it is more likely than not that the project will be completed, the software will be used to perform the intended function with an estimated service life of two years or more, and the completion of conceptual formulation, design and testing of possible software project alternatives (the preliminary design stage). Costs incurred after final acceptance testing has been successfully completed are expensed. Capitalized computer software costs are amortized over their estimated useful life of three years.

All computer software costs capitalized to date relate to the purchase, development and implementation of engineering, accounting and other enterprise software.

Impairment of Long-Lived Assets

We evaluate long-lived assets for impairment when factors indicate that the carrying value of an asset may not be recoverable. When factors indicate that such assets should be evaluated for possible impairment, we review whether we will be able to realize our long-lived assets by analyzing the projected undiscounted cash flows in measuring whether the asset is recoverable. In 2022, we recognized a $2.4 million impairment, comprised of $0.4 million of property and equipment and $2.0 million of right of use assets, related to the abandonment of portions of three of our leased properties, which was included within "*Restructuring activities*" in the consolidated statement of income. In 2021, a non-controlled subsidiary that we consolidate for financial statement purposes approved a plan to sell certain patents, which resulted in the Company recognizing a $13.2 million impairment, as discussed further in Note 20, "*Restructuring Activities".* In 2020, we recognized a $1.1 million impairment, comprised of $0.8 million of Property, Plant, and Equipment, and $0.3 million of Operating lease right-of-use asset related to the abandonment of one of our leased properties, which was included within "*Operating Expenses*" in the consolidated statement of income.

Revenue Recognition

We derive the vast majority of our revenue from patent licensing. The timing and amount of revenue recognized from each licensee depend upon a variety of factors, including the specific terms of each agreement and the nature of the deliverables and obligations. Such agreements are often complex and include multiple performance obligations. These agreements can include, without limitation, performance obligations related to the settlement of past patent infringement liabilities, patent and/or know-how licensing royalties on covered products sold by licensees, access to a portfolio of technology as it exists at a point in time, and access to a portfolio of technology at a point in time along with promises to provide any technology updates to the portfolio during the term.

In accordance with US GAAP, we use a five-step model to achieve the core underlying principle that an entity should recognize revenue to depict the transfer of goods or services to customers at an amount that the entity expects to be entitled to in exchange for those goods or services. These steps include (1) identifying the contract with the customer, (2) identifying the performance obligations, (3) determining the transaction price, (4) allocating the transaction price to the performance obligations, and (5) recognizing revenue as the entity satisfies the performance obligation(s). Additionally, we have elected to utilize certain practical expedients in the application of ASC 606. In evaluating the presence of a significant financing component in our agreements, we utilize the practical expedient to exclude any contracts wherein the gap between payment by our customers and the delivery of our performance obligation is less than one year. We have also elected to utilize the practical expedient related to costs of obtaining a contract where an entity may recognize the incremental costs of obtaining a contract as an expense when incurred if the amortization period of the asset that the entity otherwise would have recognized is one year or less. Timing of revenue recognition may differ significantly from the timing of invoicing to customers. Contract assets are included in accounts receivable and represent unbilled amounts expected to be received from customers in future periods, where the revenue recognized to date exceeds the amount billed, and right to payment is subject to the underlying contractual terms. Contract assets are classified as long-term assets if the payments are expected to be received more than one year from the reporting date. Contract assets due within less than twelve months of the balance sheet date are included within accounts receivable in our consolidated balance sheets. Contract assets due more than twelve months after the balance sheet date are included within other non-current assets.

For certain patent license agreements or other contractual arrangements, the amount of consideration that we will receive is uncertain. In such cases, we estimate and recognize licensing revenues only when we have a contract, as defined in the revenue recognition guidance. Such estimates are only recognized to the extent it is probable that a significant reversal of cumulative revenues recognized will not occur. We analyze the risk of a significant revenue reversal considering both the likelihood and magnitude of the reversal and, if necessary, constrain the amount of estimated revenues recognized in order to mitigate this risk, which may result in recognizing revenues less than amounts we expect we are most likely to receive. These aforementioned estimates may require significant judgment.

Patent License Agreements

Upon signing a patent license agreement, we provide the licensee permission to use our patented inventions in specific applications. We account for patent license agreements in accordance with the guidance indicated above.

Certain patent license agreements contain revenue from non-financial sources in the form of patents received from the customer. Under our patent license agreements, we typically receive one or a combination of the following forms of payment as consideration for permitting our licensees to use our patented inventions in their applications and products

Consideration for Past Patent Royalties

Consideration related to a licensee's product sales from prior periods may result from a negotiated agreement with a licensee that utilized our patented inventions prior to signing a patent license agreement with us or from the resolution of a disagreement or arbitration with a licensee over the specific terms of an existing license agreement. We may also receive consideration for past patent royalties in connection with the settlement of patent litigation where there was no prior patent license agreement. In each of these cases, we record the consideration as revenue as prescribed by the five-step model.

Fixed-Fee Agreements

Fixed-fee license agreements include fixed, non-refundable royalty payments that fulfill the licensee's obligations to us under a patent license agreement for a specified time period or for the term of the agreement for specified products, under certain patents or patent claims, for sales in certain countries, or a combination thereof - in each case for a specified time period (including for the life of the patents licensed under the agreement).

Dynamic fixed-fee license agreements contain a single performance obligation that represents ongoing access to a portfolio of technology over the license term, since our promise to transfer to the licensee access to the portfolio as it exists at inception of the license, along with promises to provide any technology updates to the portfolio during the term, are not separately identifiable. Upon entering a new agreement, we allocate the transaction price to the performance obligations delivered at signing (e.g. our existing patent portfolio) and future performance obligations (e.g. the technology updates). We use a time-based input method of progress to determine the timing of revenue recognition, and as such we recognize the future deliverables on a straight-line basis over the term of the agreement. We utilize the straight-line method as we believe that it best depicts efforts expended to develop and transfer updates to the customer evenly throughout the term of the agreement.

Static fixed-fee license agreements are fixed-price contracts that generally do not include updates to technology we create after the inception of the license agreement or in which the customer does not stand to substantively benefit from those updates during the term. Although we have few static fixed-fee license agreements, we generally satisfy our performance obligations under such agreements at contract signing, and, as such, revenue is recognized at that time.

Variable Agreements

Upon entering a new variable patent license agreement, the licensee typically agrees to pay royalties or license fees on licensed products sold during the term of the agreement. We utilize the sales- or usage- based royalty exception for these agreements and recognize revenues during the contract term when the underlying sale or usage occurs. Our licensees under variable agreements provide us with quarterly royalty reports that summarize their sales of covered products and their related royalty obligations to us. We typically receive these royalty reports subsequent to the period in which our licensees' underlying sales occurred. As a result, we are required to estimate revenues and recognize sales-based royalties on such licensed products in the period in which the associated sales occur, considering all relevant information (historical, current and forecasted) that is reasonably available to us. Estimating licensees' quarterly royalties prior to receiving the royalty reports requires us to make assumptions and judgments related to forecasted trends and growth rates used to estimate our licensees' sales, which could have an impact on the amount of revenue we report on a quarterly basis. As a result of recognizing revenues in the period in which the licensees' sales occur using estimates, adjustments to revenues are required in subsequent periods to reflect changes in estimates as new information becomes available, primarily resulting from actual amounts reported by our licensees.

Technology Solutions

Technology solutions revenue consists primarily of revenue from royalty payments, software licenses, and engineering services. The nature of these contracts and timing of payments vary. We recognize revenue from royalty payments and license agreements using the same methods described above under our policy for recognizing revenue from patent license agreements. We recognize revenue from engineering services using the percentage of completion method.

Patent Sales

During 2022, we determined patent sales are no longer a part of the company's on-going central operations and therefore will no longer be accounted for as revenue.

Accounts Receivable

Accounts receivable is presented net of allowance for doubtful accounts. Our accounts receivable consists mainly of trade receivables derived from fixed-fee license arrangements with contractual payment terms. The remaining material amounts of our accounts receivable are from variable patent license agreements, which primarily are paid on a quarterly basis. The provision for doubtful accounts reflects the current estimate of credit losses expected to be incurred over the life of the financial asset, based on historical experience, current conditions and reasonable forecasts of future economic conditions. Further, we evaluate the collectability of our accounts receivable and if there is doubt that we will collect the full amount, we will record a reserve specific to that customer's receivable balance. Our provision for doubtful accounts was $0.0 million and $0.3 million as of December 31, 2022 and 2021, respectively.

Investments in Other Entities

We may make strategic investments in companies that have developed or are developing technologies that are complementary to our business. We made an accounting policy election for a measurement alternative for our equity investments that do not have readily determinable fair values, specifically related to our strategic investments in other entities. Under the alternative, our strategic investments in other entities without readily determinable fair values are measured at cost, less any impairment, plus or minus changes resulting from observable price changes in orderly transactions for an identical or similar investment of the same issuer, if any. On a quarterly basis, we monitor items such as our investment's financial position and liquidity, performance targets, business plans, and cost trends to assess whether there are any triggering events or indicators present that would be indicative of an impairment, or any other observable price changes as indicated above. We do not adjust our investment balance when the investee reports profit or loss.

Additionally, other investments may be accounted for under the equity method of accounting. Under this method, we initially record our investment in the stock of an investee at cost, and adjust the carrying amount of the investment to recognize our share of the earnings or losses of the investee after the date of acquisition. The amount of the adjustment is included in the determination of net income, and such amount reflects adjustments similar to those made in preparing consolidated statements including adjustments to eliminate intercompany gains and losses, and to amortize, if appropriate, any difference between our cost and underlying equity in net assets of the investee at the date of investment. The investment is also adjusted to reflect our share of changes in the investee's capital. Dividends received from an investee reduce the carrying amount of the investment. When there are a series of operating losses by the investee or when other factors indicate that a decrease in value of the investment has occurred which is other than temporary, we recognize an impairment equal to the difference between the fair value and the carrying amount of our investment.

The carrying value of our investments in other entities is included within "*Other non-current assets, net*" on our consolidated balance sheets. During 2022, 2021 and 2020, we made investments in other entities of $0.0 million, $1.1 million and $0.2 million, respectively. The carrying value of our investments in other entities as of December 31, 2022 and 2021 was $19.6 million and $21.3 million, respectively, the majority of which are accounted for under the measurement alternative for equity investments described above.

Collaborative Arrangements

We record the elements of our collaboration agreements that represent joint operating activities in accordance with ASC 808, *Collaborative Arrangements* ("ASC 808"). Accordingly, the elements of our collaboration agreements that represent activities in which both parties are active participants, and to which both parties are exposed to the significant risks and rewards that are dependent on the commercial success of the activities, are recorded as collaborative arrangements. Generally, the classification of a transaction under a collaborative arrangement is determined based on the nature and contractual terms of the arrangement along with the nature of the operations of the participants. For transactions that are deemed to be a collaborative arrangement under ASC 808, costs incurred and revenues generated on sales to third parties will be reported in our consolidated statement of operations on a gross basis if the Company is deemed to be the principal in the transaction, or on a net basis if the Company is instead deemed to be the agent in the transaction, consistent with the guidance in ASC 606-10-55-36, *Revenue From Contracts with Customers - Principal Agent Considerations*.

Deferred Charges

Direct costs of obtaining a contract or fulfilling a contract in a transaction that results in the deferral of revenue may be either expensed as incurred or capitalized, depending on certain criteria. In conjunction with our adoption of ASC 606 effective January 1, 2018, we made a policy election to utilize the practical expedient related to costs of obtaining a contract where an entity may recognize the incremental costs of obtaining a contract as an expense when incurred if the amortization period of the asset that the entity otherwise would have recognized is one year or less. If the amortization period is greater than one year, we capitalize direct costs incurred for the acquisition or fulfillment of a contract through the date of signing if they are directly related to a particular revenue arrangement and are expected to be recovered. The costs are amortized on a straight-line basis over the life of the patent license agreement.

For example, from time to time, we use sales agents to assist us in our licensing and/or patent sale activities. In such cases, we may pay a commission. The commission rate varies from agreement to agreement. Commissions are normally paid shortly after our receipt of cash payments associated with the patent license or patent sale agreements. We defer recognition of commission expense and amortize these expenses in proportion to our recognition of the related revenue. Commission expense is included within the "*Licensing*" line of our consolidated statements of income and was immaterial for the years presented. There were $0.7 million of new direct contract costs in 2022 and no new direct contract costs incurred during 2021 or 2020.

Incremental direct costs incurred related to a debt financing transaction may be capitalized. In connection with our offering of the 2027 Notes, 2024 Notes, and 2020 Notes, defined and discussed in detail within Note 9, "*Obligations*", we incurred directly related costs. The debt issuance costs of the debt were capitalized as deferred financing costs and recorded as a direct reduction of the debt. These costs are being amortized over the term of the debt using the effective interest method and are included within the "*Interest expense*" line of our consolidated statements of income. The balance of unamortized deferred financing costs as of December 31, 2022 and 2021 was $9.8 million and $4.4 million, respectively. The Company incurred $9.9 million of new debt issuances costs in 2022 in conjunction with the issuance of the 2027 Notes, $6.4 million in 2020 in conjunction with the issuance of the 2024 Notes, and no new debt issuance costs were incurred in 2021. Deferred financing expense was $2.0 million, $1.6 million and $1.2 million in 2022, 2021 and 2020, respectively.

Research and Portfolio Development

Research and portfolio development expenditures are expensed in the period incurred, except certain software development costs that are capitalized between the point in time that technological feasibility of the software is established and when the product is available for general release to customers. We did not have any capitalized software costs related to research and development in any period presented. Research and portfolio development costs were approximately $185.2 million, $200.5 million and $204.4 million in 2022, 2021 and 2020, respectively.

Compensation Programs

We use a variety of compensation programs to attract, retain and motivate our employees, and to align employee compensation more closely with company performance. These programs include, but are not limited to, short-term incentives tied to performance goals, cash awards to inventors for filed patent applications and patent issuances, and long-term incentives in the form of stock option awards, time-based restricted stock unit (“RSU”) awards, performance-based RSU awards and cash awards, noting equity awards are granted pursuant to the terms and conditions of our Equity Plans (as defined in Note 12, "*Compensation Plans and Programs*"). Our long-term incentives, including equity awards, typically include annual equity and cash award grants with three to five year vesting periods; as a result, in any one year, we are typically accounting for at least three active cycles.

We account for compensation costs associated with share-based compensation based on the fair value of the instruments issued. The estimated value of stock options includes assumptions around expected life, stock volatility and dividends. For stock options considered to be “plain vanilla” options, the Company estimates the expected term based on the simplified method as prescribed by Staff Accounting Bulletin Topic 14. The simplified method was used because the Company does not believe it has sufficient historical exercise data to provide a reasonable basis for the expected term of its grants. In all periods, our policy has been to set the value of RSUs awards equal to the value of our underlying common stock on the date of measurement. For grants with graded vesting, we amortize the associated unrecognized compensation cost using an accelerated method. For grants that cliff vest, we amortize the associated unrecognized compensation cost on a straight-line basis over their vesting term.

In the event of canceled awards, we adjust compensation expense recognized to date as they occur. Tax windfalls and shortfalls related to the tax effects of employee share-based compensation are included in our tax provision. On the consolidated statements of cash flows, tax windfalls and shortfalls related to employee share-based compensation awards are included within operating activities and cash paid to tax authorities for shares withheld are included within financing activities. The inclusion of windfalls and shortfalls in the tax provision could increase our earnings volatility between periods. Tax windfalls and shortfalls related to share-based compensation was shortfalls of $0.4 million for the year ended 2022, and windfalls for the years ended 2021 and 2020 of $0.8 million and $0.2 million, respectively.

Restructuring

Restructuring activities include, but are not limited to, costs associated with termination benefits such as severance costs and retention bonuses, contract termination costs, and other costs associated with an exit or disposal activity. The termination benefits included within restructuring activities are recognized in accordance with either ASC 420, *Exit or Disposal Cost Obligations* ("ASC 420") or ASC 712, *Compensation – Nonretirement Postemployment Benefits* ("ASC 712"), as applicable. Liabilities are recognized in accordance with ASC 420 when management commits to a plan of termination, the employees to be terminated are identified, the terms of the benefit arrangement are established, it was determined that either changes to the plan or withdrawal are unlikely, and the arrangements were communicated to employees. Liabilities that fall under ASC 712 are recognized when the liability was determined to be probable of being paid and reasonably estimable. The current liabilities are recorded within "*Other accrued expenses*" and long-term liabilities are included in "*Other long-term liabilities*" in the consolidated balance sheets. The restructuring expenses are included in "*Restructuring activities*" in the consolidated statements of income.

Income Taxes

Income taxes are accounted for under the asset and liability method. Under this method, deferred tax assets and liabilities are recognized for the estimated future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases, and operating loss and tax credit carry forwards. Deferred tax assets and liabilities are measured using enacted tax rates in effect for the year in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in the consolidated statement of income in the period in which the change was enacted. A valuation allowance is recorded to reduce the carrying amounts of deferred tax assets if management has determined that it is more likely than not that such assets will not be realized.

In addition, the calculation of tax liabilities involves significant judgment in estimating the impact of uncertainties in the application of complex tax laws. We are subject to examinations by the U.S. IRS and other taxing jurisdictions on various tax matters, including challenges to various positions we assert in our filings. In the event that the IRS or another taxing jurisdiction levies an assessment in the future, it is possible the assessment could have a material adverse effect on our consolidated financial condition or results of operations.

The financial statement recognition of the benefit for an uncertain tax position is dependent upon the benefit being more likely than not to be sustainable upon audit by the applicable tax authority. If this threshold is met, the tax benefit is then measured and recognized at the largest amount that is greater than 50 percent likely of being realized upon ultimate settlement. In the event that the IRS or another taxing jurisdiction levies an assessment in the future, it is possible the assessment could have a material adverse effect on our consolidated financial condition or results of operations.

Treasury Stock

We record the repurchase of our shares of common stock at cost based on the settlement date of the transaction. These shares are classified as treasury stock, which is a reduction to shareholders' equity. Treasury shares are included in authorized and issued shares, but excluded from outstanding shares.

In August 2022, the Inflation Reduction Act was enacted in the United States, which included, among other items, a 1% excise tax on certain net stock repurchases after December 31, 2022. Any such excise tax on our stock repurchases will be recorded as a component of stockholders' equity, as Treasury Stock.

New Accounting Guidance

Accounting Standards Update: Issuer's Accounting for Certain Modifications or Exchanges of Freestanding Equity Classified Written Call Options

In May 2021, the FASB issued ASU No. 2021-04. The amendments in this ASU are intended to clarify and reduce diversity in an issuer's accounting for modifications or exchanges of freestanding equity-classified written call options, including warrants, that remain equity classified after modification or exchange. ASU 2021-04 is effective for fiscal years beginning after December 15, 2021, with early adoption allowed. We adopted this guidance as of January 1, 2022 and the adoption did not have a material impact on our consolidated financial statements.

Accounting Standards Update: Simplifying the Accounting for Convertible Instruments

In August 2020, the FASB issued ASU No. 2020-06, "Debt—Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity's Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity's Own Equity" ("ASU 2020-06"). The amendments in this ASU are intended to simplify accounting for convertible debt instruments and convertible preferred stock by removing certain accounting models which separate the embedded conversion features from the host contract. ASU 2020-06 also amends certain guidance in ASC 260 on the computation of earnings per share for convertible instruments and contracts on an entity's own equity. ASU 2020-06 is effective for fiscal years beginning after December 15, 2021, including interim periods within those fiscal years, and early adoption was permitted for fiscal years beginning after December 15, 2020. The ASU permits the use of either the modified retrospective or fully retrospective methods of transition. We elected to early adopt this standard on a modified retrospective approach as of January 1, 2021, which resulted in a $10.4 million, $50.2 million and $15.6 million increase to net deferred tax assets, long-term debt and retained earnings, respectively, and a $55.4 million decrease to additional paid-in capital. This $50.2 million increase to long-term debt, net was comprised of $51.6 million of unamortized interest discount partially offset by a net increase of $1.4 million in unamortized debt issuance costs following the reversal of the initially established equity component of deferred financing costs. This was due to the standard no longer requiring bifurcation of the embedded conversion feature from the host contract on the 2024 Notes, as defined in Note 9, "Obligations". This adoption also reduced non-cash interest expense starting in 2021 due to the removal of the accretion of the debt discount on the 2024 Notes. In addition, the adoption requires the use of the if-converted method of calculating diluted earnings per share rather than the treasury stock method for convertible instruments and requires the inclusion of the potential effect of shares settled in cash or shares in the diluted earnings per share calculation.

3. REVENUE RECOGNITION

Disaggregated Revenue

We recently experienced significant growth in licensing our horizontal technologies from our foundational research across new vertical markets. Accordingly, we have disaggregated revenue between Smartphone and Consumer Electronics ("CE"), IoT/Auto. We believe this better reflects both our current revenue sources and our growth opportunities across these vertical markets.

The following table presents the disaggregation of our revenue for the year ended December 31, 2022, 2021 and 2020 (in thousands):

	For the Year Ended December 31,		
	2022	2021	2020
Recurring revenues:			
Smartphone	$ 351,064	$ 315,098	$ 302,097
CE, IoT/Auto	51,717	31,721	22,951
Other	1,107	4,881	11,761
Total recurring revenues	403,888	351,700	336,809
Non-recurring revenues [a]	53,906	73,709	22,182
Total revenues	$ 457,794	$ 425,409	$ 358,991

a. Non-recurring revenues are comprised of past patent royalties and revenues from static agreements.

During the year ended December 31, 2022, we recognized $291.5 million of revenue that had been included in deferred revenue as of the beginning of the period. As of December 31, 2022, we had contract assets of $32.9 million and $2.5 million included within "*Accounts receivable, net*" and "*Other non-current assets, net*" in the consolidated balance sheet, respectively. As of December 31, 2021, we had contract assets of $18.9 million and $8.3 million included within "*Accounts receivable, net*" and "*Other non-current assets, net*" in the consolidated balance sheet, respectively.

Contracted Revenue

Based on Dynamic Fixed-Fee Agreements as of December 31, 2022, we expect to recognize the following amounts of revenue over the term of such contracts (in thousands):

	Revenue [(a)]
2023	$ 267,053
2024	217,173
2025	204,418
2026	137,196
2027	134,963
Thereafter	237,815
	$ 1,198,618

(a) This table does not include any revenue that we expect to recognize under our arbitration or resulting patent license agreement with Samsung.

4. GEOGRAPHIC / CUSTOMER CONCENTRATION

The Company's chief operating decision maker assesses company-wide performance and allocates resources based on consolidated financial information. As such, we have one reportable segment. During 2022, 2021 and 2020, the majority of our revenue was derived from a limited number of licensees based outside of the United States, primarily in Asia. Substantially all of these revenues were paid in U.S. dollars and were not subject to any substantial foreign exchange transaction risk. The table below lists the countries of the headquarters of our licensees and customers and the total revenue derived from each country or region for the periods indicated (in thousands):

	For the Year Ended December 31,		
	2022	2021	2020
United States	$ 219,744	$ 169,044	$ 128,238
China	103,922	118,197	63,172
South Korea	90,018	86,677	111,634
Japan	21,946	24,689	23,694
Taiwan	11,621	11,040	10,059
Europe	10,543	15,762	22,194
Total revenue	$ 457,794	$ 425,409	$ 358,991

During 2022, 2021 and 2020, the following licensees or customers accounted for 10% or more of total revenues:

	For the Year Ended December 31,		
	2022	2021	2020
Customer A	30%	28%	31%
Customer B	17%	18%	22%
Customer C	13%	14%	—%
Customer D	<10%	10%	15%

As of December 31, 2022, and 2021, we held $365.3 million and $377.0 million of our property, equipment and patents, net of accumulated depreciation and amortization, respectively, of which 93% of the total was within the United States in each of the years presented. As of December 31, 2022 and 2021, we held $27.2 million and $25.9 million of property, equipment and patents, net of accumulated depreciation and amortization, collectively, in Canada and Europe.

5. CASH, CASH EQUIVALENTS, RESTRICTED CASH AND MARKETABLE SECURITIES

Cash, Cash Equivalents and Restricted Cash

Cash, cash equivalents and restricted cash as of December 31, 2022 and 2021 consisted of the following (in thousands):

	December 31,	
	2022	2021
Money market and demand accounts	$ 643,825	$ 705,725
Commercial paper	26,741	7,499
U.S. government securities	15,707	—
Corporate bonds, asset backed and other securities	16,888	—
Total cash, cash equivalents and restricted cash	$ 703,161	$ 713,224

The following table provides a reconciliation of total cash, cash equivalents and restricted cash as of December 31, 2022 and 2021 within the consolidated balance sheets (in thousands):

	December 31,	
	2022	2021
Cash and cash equivalents	$ 693,479	$ 706,282
Restricted cash included within prepaid and other current assets	9,682	5,861
Restricted cash included within other non-current assets	—	1,081
Total cash, cash equivalents and restricted cash	$ 703,161	$ 713,224

Marketable Securities

As of December 31, 2022 and 2021, the majority of our marketable securities are classified as available-for-sale and are carried at fair value, with unrealized gains and losses reported net-of-tax as a separate component of shareholders' equity. Substantially all of our investments are investment-grade government and corporate debt securities that have maturities of less than two years, and we have both the ability and intent to hold the investments until maturity. We recorded no other-than-temporary impairments during 2022, 2021 or 2020. The gross realized gains and losses on sales of marketable securities were not significant during the years ended December 31, 2022, 2021 and 2020.

Marketable securities as of December 31, 2022 and 2021 consisted of the following (in thousands):

	December 31, 2022			
	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Available-for-sale securities				
Commercial paper	$ 210,146	$ 30	$ (220)	$ 209,956
U.S. government securities	244,174	19	(353)	243,840
Corporate bonds, asset backed and other securities	113,921	33	(116)	113,838
Total available-for-sale securities	$ 568,241	$ 82	$ (689)	$ 567,634
Reported in:				
Cash and cash equivalents				$ 59,336
Short-term investments				508,298
Total marketable securities				$ 567,634

	December 31, 2021			
	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Available-for-sale securities				
Commercial paper	$ 158,468	$ 2	$ (18)	$ 158,452
U.S. government securities	51,444	—	(143)	51,301
Corporate bonds, asset backed and other securities	33,086	6	(1)	33,091
Total available-for-sale securities	$ 242,998	$ 8	$ (162)	$ 242,844
Reported in:				
Cash and cash equivalents				$ 7,499
Short-term investments				235,345
Total marketable securities				$ 242,844

As of December 31, 2022 and 2021, $557.7 million and $210.8 million, respectively, of our short-term investments had contractual maturities within one year. The remaining portions of our short-term investments had contractual maturities within one to two years.

6. CONCENTRATION OF CREDIT RISK AND FAIR VALUE OF FINANCIAL ASSETS AND FINANCIAL LIABILITIES

Concentration of Credit Risk and Fair Value of Financial Instruments

Financial instruments that potentially subject us to concentration of credit risk consist primarily of cash equivalents, short-term investments and accounts receivable. We primarily place our cash equivalents and short-term investments in highly rated financial instruments and in United States government instruments.

Our accounts receivable are derived principally from patent license and technology solutions agreements. As of December 31, 2022, four licensees comprised 76%, and as of December 31, 2021 four licensees comprised 66%, of our accounts receivable balance. We perform ongoing credit evaluations of our licensees, who generally include large, multinational, wireless telecommunications equipment manufacturers. We believe that the book values of our financial instruments approximate their fair values.

Fair Value Measurements

We use various valuation techniques and assumptions when measuring the fair value of our assets and liabilities. We utilize market data or assumptions that market participants would use in pricing the asset or liability, including assumptions about risk and the risks inherent in the inputs to the valuation technique. This guidance established a hierarchy that prioritizes fair value measurements based on the types of input used for the various valuation techniques (market approach, income approach and cost approach). The levels of the hierarchy are described below:

Level 1 Inputs — Level 1 includes financial instruments for which quoted market prices for identical instruments are available in active markets.

Level 2 Inputs — Level 2 includes financial instruments for which there are inputs other than quoted prices included within Level 1 that are observable for the instrument such as quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets with insufficient volume or infrequent transactions (less active markets) or model-driven valuations in which significant inputs are observable or can be derived principally from, or corroborated by, observable market data, including market interest rate curves, referenced credit spreads and pre-payment rates.

Level 3 Inputs — Level 3 includes financial instruments for which fair value is derived from valuation techniques including pricing models and discounted cash flow models in which one or more significant inputs are unobservable, including the company's own assumptions. The pricing models incorporate transaction details such as contractual terms, maturity and, in certain instances, timing and amount of future cash flows, as well as assumptions related to liquidity and credit valuation adjustments of marketplace participants.

Our assessment of the significance of a particular input to the fair value measurement requires judgment and may affect the valuation of financial assets and financial liabilities and their placement within the fair value hierarchy. We use quoted market prices for similar assets to estimate the fair value of our Level 2 investments.

Recurring Fair Value Measurements

Our financial assets are included within short-term investments on our consolidated balance sheets, unless otherwise indicated. Our financial assets and liabilities that are accounted for at fair value on a recurring basis are presented in the tables below as of December 31, 2022 and December 31, 2021 (in thousands):

	Fair Value as of December 31, 2022			
	Level 1	Level 2	Level 3	Total
Assets:				
Money market and demand accounts [(a)]	$ 643,825	$ —	$ —	$ 643,825
Commercial paper [(b)]	—	209,956	—	209,956
U.S. government securities [(c)]	—	243,840	—	243,840
Corporate bonds, asset backed and other securities [(d)]	—	113,838	—	113,838
	$ 643,825	$ 567,634	$ —	$ 1,211,459

	Fair Value as of December 31, 2021			
	Level 1	Level 2	Level 3	Total
Assets:				
Money market and demand accounts [(a)]	$ 705,725	$ —	$ —	$ 705,725
Commercial paper [(b)]	—	158,452	—	158,452
U.S. government securities	—	51,301	—	51,301
Corporate bonds and asset backed securities	—	33,091	—	33,091
	$ 705,725	$ 242,844	$ —	$ 948,569

(a) Included within cash and cash equivalents.
(b) As of December 31, 2022 and 2021, $26.7 million and $7.5 million of commercial paper was included within cash and cash equivalents, respectively.
(c) As of December 31, 2022, $15.7 million of U.S. government securities was included within cash and cash equivalents.
(d) As of December 31, 2022, $16.9 million of corporate bonds, asset backed and other securities was included within cash and cash equivalents.

Fair Value of Long-Term Debt

Senior Convertible Notes

The principal amount, carrying value and related estimated fair value of the Company's senior convertible debt reported in the consolidated balance sheets as of December 31, 2022 and December 31, 2021 was as follows (in thousands). The aggregate fair value of the principal amount of the senior convertible long-term debt is a Level 2 fair value measurement.

	December 31, 2022			December 31, 2021		
	Principal Amount	Carrying Value	Fair Value	Principal Amount	Carrying Value	Fair Value
2027 Senior Convertible Long-Term Debt	$ 460,000	$ 451,062	$ 441,485	$ —	$ —	$ —
2024 Senior Convertible Long-Term Debt	$ 126,174	$ 125,342	$ 119,941	$ 400,000	$ 395,632	$ 437,760

Technicolor Patent Acquisition Long-term Debt

As more fully disclosed in Note 9, "*Obligations*," we recognized long-term debt in conjunction with the Technicolor Patent Acquisition. The carrying value and related estimated fair value of the Technicolor Patent Acquisition long-term debt reported in the consolidated balance sheet as of December 31, 2022 and December 31, 2021 was as follows (in thousands). The aggregate fair value of the Technicolor Patent Acquisition long-term debt is a Level 3 fair value measurement.

	December 31, 2022		December 31, 2021	
	Carrying Value	Fair Value	Carrying Value	Fair Value
Technicolor Patent Acquisition Long-Term Debt	$ 30,662	$ 28,048	$ 27,113	$ 28,569

Non-recurring Fair Value Measurements

Investments in Other Entities

As disclosed in Note 2, "*Summary of Significant Accounting Policies and New Accounting Guidance*", we made an accounting policy election to utilize a measurement alternative for equity investments that do not have readily determinable fair values, which applies to our long-term strategic investments in other entities. Under the alternative, our long-term strategic investments in other entities that do not have readily determinable fair values are measured at cost, less any impairment, plus or minus changes resulting from observable price changes in orderly transactions for an identical or similar investment of the same issuer. Any adjustments to the carrying value of those investments are considered non-recurring fair value measurements.

During year ended December 31, 2022, we recognized a net loss of $1.3 million and during year ended 2021 and 2020 we recognized gains of $7.6 million, and $5.6 million, respectively, resulting from observable price changes of our long-term strategic investments, which were included within "*Other (expense) income, net*" in the consolidated statement of income. Certain of our investments in other entities may be seeking additional financing in the next twelve months or potential exit strategies. We will continue to review and monitor our investments in other entities for any indications of an increase in fair value or impairment.

Lease Assets

During 2020, we recognized a $1.1 million impairment, comprised of $0.8 million of Property and Equipment, and $0.3 million of Operating lease right-of-use asset related to the abandonment of one of our leased properties, which was included within "*Operating Expenses*" in the consolidated statement of income.

Patents

During 2021, we recognized a $13.2 million impairment, resulting from our restructuring activities as described in Note 20, "*Restructuring Activities*", which was included within "*Restructuring activities*" expenses in the consolidated statement of income. The Patents held for sale are recorded at fair value on December 31, 2022 and 2021 and are included within "*Prepaid and other current assets*" in the consolidated balance sheet.

Also during 2021, we renewed our multi-year, worldwide, non-exclusive patent license agreement with Sony and a portion of the future consideration for the agreement was in the form of patents. These patents transferred during 2022 and we have determined the estimated fair value of the patents for determining the transaction price for revenue recognition purposes, which was estimated to be $30.1 million utilizing the income and market approach. The value will be amortized as a non-cash expense over the patents' estimated useful lives.

During 2020, we entered into a patent license agreement with Huawei and a portion of the future consideration for the agreement was in the form of patents. We have determined the estimated fair value of the patents for determining the transaction price for revenue recognition purposes, which was estimated to be $19.3 million utilizing the market approach. The value is amortized as a non-cash expense over the patents' estimated useful lives.

As noted above, we estimated the fair value of the patents in these transactions using one of, or a combination of, an analysis of comparable market transactions (the market approach), a discounted cash flow analysis (the income approach) and/or by quantifying the amount of money required to replace the future service capability of the assets (the cost approach). For the market approach, judgment was applied as to which market transactions were most comparable to the transaction. For the income approach, the inputs and assumptions used to develop these estimates were based on a market participant perspective and included estimates of projected royalties, discount rates, economic lives and income tax rates, among others. For the cost approach, we utilized the historical cost of assets of similar technologies to determine the estimated replacement cost, including research, development, testing and patent application fees.

7. PROPERTY AND EQUIPMENT

Property and equipment, net is comprised of the following (in thousands):

	December 31,	
	2022	2021
Computer equipment and software	$ 15,144	$ 14,787
Leasehold improvements	12,636	11,743
Building and improvements	3,517	3,574
Engineering and test equipment	1,317	1,470
Furniture and fixtures	670	799
Property and equipment, gross	33,284	32,373
Less: accumulated depreciation	(21,946)	(18,996)
Property and equipment, net	$ 11,338	$ 13,377

Depreciation expense was $4.9 million, $5.6 million and $5.3 million in 2022, 2021 and 2020, respectively.

8. PATENTS, GOODWILL AND OTHER INTANGIBLE ASSETS

Patents

As of December 31, 2022 and 2021, patents consisted of the following (in thousands, except for useful life data):

	December 31,	
	2022	2021
Weighted average estimated useful life (years)	10.0	9.9
Gross patents	$ 1,018,957	$ 956,387
Accumulated amortization	(664,958)	(592,802)
Patents, net	$ 353,999	$ 363,585

Amortization expense related to capitalized patent costs was $73.4 million, $71.5 million and $74.9 million in 2022, 2021 and 2020, respectively. These amounts are recorded within the "*Licensing*" line of our consolidated statements of income.

The estimated aggregate amortization expense for the next five years related to our patents balance as of December 31, 2022 is as follows (in thousands):

2023	$ 71,443
2024	60,983
2025	57,417
2026	49,000
2027	$ 44,027

Goodwill

The following table shows the change in the carrying amount of our goodwill balance from December 31, 2020 to December 31, 2022, all of which is allocated to our one reportable segment (in thousands):

Goodwill balance as of December 31, 2020	$ 22,421
Activity	—
Goodwill balance as of December 31, 2021	$ 22,421
Activity	—
Goodwill balance as of December 31, 2022	$ 22,421

9. OBLIGATIONS

Long-term debt obligations, excluding the long-term debt resulting from the Technicolor Patent Acquisition, are comprised of the following (in thousands):

	December 31,			
	2022			2021
	2027 Notes	2024 Notes	Total	2024 Notes
Principal	$ 460,000	$ 126,174	$ 586,174	$ 400,000
Less:				
Deferred financing costs	(8,938)	(832)	(9,770)	(4,368)
Net carrying amount of the Convertible Notes	$ 451,062	$ 125,342	$ 576,404	$ 395,632

There were no finance leases as of December 31, 2022 or December 31, 2021.

Maturities of principal of the long-term debt obligations of the Company as of December 31, 2022, excluding the long-term debt resulting from the Technicolor Patent Acquisition, are as follows (in thousands):

2023	$ —
2024	126,174
2025	—
2026	—
2027	460,000
Thereafter	—
	$ 586,174

2027 Notes, and Related Note Hedge and Warrant Transactions

On May 27, 2022 we issued $460.0 million in aggregate principal amount of 3.50% Senior Convertible Notes due 2027 (the "2027 Notes"). The net proceeds from the issuance of the 2027 Notes, after deducting the initial purchasers' transaction fees and offering expenses, were approximately $450.0 million. The 2027 Notes bear interest at a rate of 3.50% per year, payable in cash on June 1 and December 1 of each year, commencing on December 1, 2022, and mature on June 1, 2027, unless earlier redeemed, converted or repurchased.

The 2027 Notes will be convertible into cash up to the aggregate principal amount of the notes to be converted and in respect of the remainder, if any, of the Company's obligation in excess of the aggregate principal amount of the notes being converted, pay or deliver, as the case may be, cash, shares of the Company's common stock or a combination thereof, at the Company's election, at an initial conversion rate of 12.9041 shares of Common Stock per $1,000 principal amount of Notes (which is equivalent to an initial conversion price of approximately $77.49 per share). The conversion rate, and thus the conversion price, may be adjusted under certain circumstances, including in connection with conversions made following fundamental changes and under other circumstances as set forth in the indenture governing the 2027 Notes.

Prior to 5:00 p.m., New York City time, on the business day immediately preceding March 1, 2027, the notes will be convertible only under the following circumstances: (1) on any date during any calendar quarter (and only during such calendar quarter) beginning after September 30, 2022 if the closing sale price of the Common Stock was more than 130% of the applicable conversion price on each applicable trading day for at least 20 trading days (whether or not consecutive) in the period of the 30 consecutive trading days ending on the last trading day of the immediately preceding calendar quarter; (2) if the Company distributes to all or substantially all holders of the Common Stock any rights, options or warrants (other than in connection with a stockholder rights plan prior to separation of such rights from the shares of the Common Stock) entitling them to purchase, for a period of 45 calendar days or less from the issuance date for such distribution, shares of Common Stock at a price per share less than the average closing sale price for the ten consecutive trading day period ending on, and including, the trading day immediately preceding the declaration date for such distribution; (3) if the Company distributes to all or substantially all holders of the Common Stock any cash or other assets, debt securities or rights to purchase the Company's securities (other than pursuant to a rights plan), which distribution has a per share value exceeding 10% of the closing sale price of the Common Stock on the trading day immediately preceding the declaration date for such distribution; (4) if the Company engages in certain corporate transactions as described in the indenture governing the 2027 Notes; (5) if the Company calls the notes for redemption, at any time prior to the close of business on the second scheduled trading day immediately preceding the redemption date; (6) during a specified period if a fundamental change (as defined in the indenture governing the 2027 Notes) occurs; or (7) during the five consecutive business day period following any five consecutive trading day period in which the trading price for the notes for each day during such five trading day period was less than 98% of the closing sale price of the Common Stock multiplied by the applicable conversion rate on each such trading day. Commencing on March 1, 2027, the notes will be convertible in multiples of $1,000 principal amount, at any time prior to 5:00 p.m., New York City time, on the second scheduled trading day immediately preceding the maturity date of the notes.

The Company may not redeem the notes prior to June 5, 2025. The Company may redeem for cash all or any portion of the notes, at the Company's option, on or after June 5, 2025, if the last reported sale price of the Common Stock has been at least 130% of the conversion price then in effect for at least 20 trading days (whether or not consecutive), including the trading day immediately preceding the date on which the Company provides notice of redemption, during any 30 consecutive trading day period ending on and including the trading day preceding the date on which the Company provides notice of redemption at a redemption price equal to 100% of the principal amount of the notes to be redeemed, plus any accrued and unpaid interest to, but excluding the redemption date.

If a fundamental change (as defined in the indenture governing the 2027 Notes) occurs, holders may require the Company to purchase all or a portion of their Notes for cash at a repurchase price equal to 100% of the principal amount of the notes to be repurchased, plus any accrued and unpaid interest to, but excluding, the fundamental change repurchase date.

The 2027 Notes are the Company's senior unsecured obligations and rank equally in right of payment with any of the Company's current and any future senior unsecured indebtedness, including its 2.00% senior convertible notes due 2024 (the "2024 Notes" and together with the 2027 Notes, the "Convertible Notes"). The 2027 Notes are effectively subordinated to all of the Company's future secured indebtedness to the extent of the value of the related collateral, and the 2027 Notes are structurally subordinated to indebtedness and other liabilities, including trade payables, of the Company's subsidiaries.

On May 24 and May 25, 2022, in connection with the offering of the 2027 Notes, we entered into convertible note hedge transactions (collectively, the "2027 Note Hedge Transactions") that cover, subject to customary anti-dilution adjustments, approximately 5.9 million shares of common stock, in the aggregate, at a strike price that initially corresponds to the initial conversion price of the 2027 Notes, subject to adjustment, and are exercisable upon any conversion of the 2027 Notes. The aggregate cost of the 2027 Note Hedge Transactions was $80.5 million.

Also on May 24 and May 25, 2022, we also entered into privately negotiated warrant transactions (collectively, the "2027 Warrant Transactions" and, together with the 2027 Note Hedge Transactions, the "2027 Call Spread Transactions"), whereby we sold warrants to acquire, subject to customary anti-dilution adjustments, approximately 5.9 million shares of common stock at an initial strike price of $106.37 per share, subject to adjustment. As consideration for the 2027 Warrant Transactions, we received aggregate proceeds of $43.7 million. The net cost of the 2027 Call Spread Transactions was $36.8 million, which was funded out of the net proceeds from the offering of the 2027 Notes.

Accounting Treatment of the 2027 Notes and Related Convertible Note Hedge and Warrant Transactions

The 2027 Call Spread Transactions were classified as equity and the 2027 Notes were classified as long-term debt. The effective interest rate is approximately 4.02%.

In connection with the above-noted transactions, the Company incurred approximately $9.9 million of directly related costs, which were capitalized as deferred financing costs and as a reduction of long-term debt. These costs are being amortized as interest expense over the term of the debt using the effective interest method.

2024 Senior Convertible Notes, and Related Note Hedge and Warrant Transactions

On June 3, 2019 we issued $400.0 million in aggregate principal amount of 2.00% Senior Convertible Notes due 2024 (the "2024 Notes"). The net proceeds from the issuance of the 2024 Notes, after deducting the initial purchasers' transaction fees and offering expenses, were approximately $391.6 million. The 2024 Notes bear interest at a rate of 2.00% per year, payable in cash on June 1 and December 1 of each year, commencing on December 1, 2019, and mature on June 1, 2024, unless earlier converted or repurchased.

The 2024 Notes were initially convertible into cash, shares of our common stock or a combination thereof, at our election, at an initial conversion rate of 12.3018 shares of common stock per $1,000 principal amount of 2024 Notes (which is equivalent to an initial conversion price of approximately $81.29 per share), as adjusted pursuant to the terms of the indenture governing the 2024 Notes (the "Indenture"). The conversion rate of the 2024 Notes, and thus the conversion price, may be adjusted in certain circumstances, including in connection with a conversion of the 2024 Notes made following certain fundamental changes and under other circumstances set forth in the Indenture. As of December 31, 2020, we made the irrevocable election to settle all conversions of the 2024 Notes through combination settlements of cash and shares of common stock, with a specified dollar amount of $1,000 per $1,000 principal amount of 2024 Notes and any remaining amounts in shares of common stock.

Prior to 5:00 p.m., New York City time, on the business day immediately preceding March 1, 2024, the 2024 Notes will be convertible only under certain circumstances as set forth in the Indenture, including on any date during any calendar quarter (and only during such calendar quarter) beginning after September 30, 2019 if the closing sale price of the common stock was more than 130% of the applicable conversion price (approximately $105.68 based on the current conversion price of the 2024 Notes) on each applicable trading day for at least 20 trading days (whether or not consecutive) in the period of the 30 consecutive trading days ending on the last trading day of the immediately preceding calendar quarter.

Commencing on March 1, 2024, the 2024 Notes will be convertible at any time prior to 5:00 p.m., New York City time, on the second scheduled trading day immediately preceding the maturity date of the 2024 Notes.

The Company may not redeem the 2024 Notes prior to their maturity date.

If a fundamental change (as defined in the Indenture) occurs, holders may require the Company to purchase all or a portion of their 2024 Notes for cash at a repurchase price equal to 100% of the principal amount of the 2024 Notes to be repurchased, plus any accrued and unpaid interest to, but excluding, the fundamental change repurchase date. The 2024 Notes are our senior unsecured obligations and rank equally in right of payment with any of our current and any future senior unsecured indebtedness. The 2024 Notes are effectively subordinated to all of our future secured indebtedness to the extent of the value of the related collateral, and the 2024 Notes are structurally subordinated to indebtedness and other liabilities, including trade payables, of our subsidiaries.

On May 29 and May 31, 2019, in connection with the offering of the 2024 Notes, we entered into convertible note hedge transactions (collectively, the “2024 Note Hedge Transactions”) that cover, subject to customary anti-dilution adjustments, approximately 4.9 million shares of common stock, in the aggregate, at a strike price that initially corresponds to the initial conversion price of the 2024 Notes, subject to adjustment, and are exercisable upon any conversion of the 2024 Notes. The aggregate cost of the 2024 Note Hedge Transactions was $72.0 million.

On May 29 and May 31, 2019, we also entered into privately negotiated warrant transactions (collectively, the “2024 Warrant Transactions” and, together with the 2024 Note Hedge Transactions, the “2024 Call Spread Transactions”), whereby we sold warrants to acquire, subject to customary anti-dilution adjustments, approximately 4.9 million shares of common stock at an initial strike price of $109.43 per share, subject to adjustment. As consideration for the 2024 Warrant Transactions, we received aggregate proceeds of $47.6 million. The net cost of the 2024 Call Spread Transactions was $24.4 million.

The net proceeds from the issuance of the 2024 Notes, after deducting fees and offering expenses, were used for the following: (i) $232.7 million was used to repurchase $221.1 million in aggregate principal amount of the 2020 Notes (as defined below) in privately negotiated transactions concurrently with the offering of the 2024 Notes, (ii) $19.6 million was used to repurchase shares of common stock at $62.53 per share, the closing price of the stock on May 29, 2019; and (iii) $24.4 million, in addition to the proceeds from the 2024 Warrant Transactions discussed above, was used to fund the cost of the 2024 Call Spread Transactions.

In 2022, the Company repurchased $273.8 million in aggregate principal amount of the 2024 Notes in privately negotiated transactions concurrently with the offering of the 2027 Notes. We specifically negotiated the repurchase of the 2024 Notes with investors who concurrently purchased the 2027 Notes, such that their purchase of the 2027 Notes funded our repurchase of the 2024 Notes. As a result of the partial repurchase of the 2024 Notes, $126.2 million in aggregate principal amount of the 2024 Notes remained outstanding as of December 31, 2022. Additionally, in connection with the partial repurchase of the 2024 Notes, the Company entered into partial unwind agreements that amend the terms of the 2024 Note Hedge Transactions to reduce the number of options corresponding to the principal amount of the repurchased 2024 Notes. The unwind agreements also reduce the number of warrants exercisable under the 2024 Warrant Transactions. As a result of the partial unwind transactions, approximately 1.6 million shares of common stock in the aggregate were covered under each of the 2024 Note Hedge Transactions and the 2024 Warrant Transactions as of December 31, 2022. As of December 31, 2022, the warrants under the 2024 Warrant Transactions had a strike price of approximately $109.43 per share, as adjusted. Proceeds received from the unwind of the 2024 Note Hedge Transactions were $11.9 million, and consideration paid for the unwind of the 2024 Warrant Transactions was $3.8 million, resulting in net proceeds received of $8.0 million for the combined unwind transactions.

Because the concurrent redemption of the 2024 Notes and a portion of issuance of the 2027 Notes were executed with the same investors, we evaluated the transaction as a debt restructuring, on a creditor by creditor basis. The accounting conclusion was based on whether the exchange was a contemporaneous exchange of cash between the same debtor and creditor in connection with the issuance of a new debt obligation and satisfaction of an existing debt obligation by the debtor and if it was determined to have substantially different terms. All creditors involved in the repurchase transaction also purchased 2027 Notes in approximately the same or greater amount as the 2024 Notes principal repurchased. Additionally, the repurchase of the 2024 Notes and issuance of the 2027 Notes were deemed to have substantially different terms on the basis that the fair value of the conversion feature increased by more than 10% of the carrying value of the 2024 Notes, and therefore, the repurchase of the 2024 Notes was accounted for as a debt extinguishment. We recognized a $11.2 million loss on extinguishment of debt during 2022 in connection with this repurchase, which is included within "Other (expense) income, net" in the consolidated statement of income. The loss on extinguishment represents the difference between the fair value of consideration paid to reacquire the 2024 Notes and the carrying amount of the debt, including any unamortized debt issuance costs attributable to the 2024 Notes redeemed. The remaining unamortized debt issuance costs of $1.2 million will continue to be amortized throughout the remaining life of the 2024 Notes.

2020 Senior Convertible Notes, and Related Note Hedge and Warrant Transactions

During second quarter 2019, the Company used $232.7 million from the offering of the 2024 Notes to repurchase $221.1 million in aggregate principal amount of the 1.50% Senior Convertible Notes due 2020 (the "2020 Notes") in privately negotiated transactions concurrently with the offering of the 2024 Notes. On March 1, 2020, the maturity date of the 2020 Notes, the Company repaid in full the remaining $94.9 million of outstanding principal.

The following table presents the amount of interest cost recognized for the years ended December 31, 2022, 2021 and 2020 related to the contractual interest coupon, accretion of the debt discount and the amortization of financing costs (in thousands):

	For the Year Ended December 31,								
	2022			2021	2020				
	2027 Notes	2024 Notes	Total	2024 Notes	2024 Notes	2020 Notes	Total		
Contractual coupon interest	$ 9,526	$ 4,760	$ 14,286	$ 8,000	$ 8,000	$ 237	$ 8,237		
Accretion of debt discount [a]	—	—	—	—	13,157	669	13,826		
Amortization of financing costs	990	1,018	2,008	1,627	1,176	70	1,246		
Total	$ 10,516	$ 5,778	$ 16,294	$ 9,627	$ 22,333	$ 976	$ 23,309		

a. Due to the adoption of ASU 2020-06 on January 1, 2021, the unamortized interest discount was reclassified back to the carrying value of the 2024 Notes.

Madison Arrangement

In conjunction with the Technicolor Patent Acquisition, we assumed Technicolor's rights and obligations under the Madison Arrangement, which commenced in 2015. The Madison Arrangement falls under the scope of ASC 808, *Collaborative Arrangements.*

Under the Madison Arrangement, Technicolor and Sony combined portions of their respective digital TV ("DTV") and computer display monitor ("CDM") patent portfolios and created a combined licensing opportunity to DTV and CDM manufacturers. Per an Agency and Management Services Agreement ("AMSA") entered into upon the creation of the Madison Arrangement, Technicolor was initially appointed as sole licensing agent of the arrangement, and InterDigital has now assumed that role. As licensing agent, we are responsible for making decisions regarding the prosecution and maintenance of the combined patent portfolio and the licensing and enforcement of the combined patent portfolio in the field of use of DTVs and CDMs on an exclusive basis during the term of the AMSA in exchange for an agent fee.

We were deemed to be the principal in this collaborative arrangement under ASC 808, and, as such, in accordance with ASC 606-10-55-36, *Revenue From Contracts with Customers - Principal Agent Considerations*, we record revenues generated on sales to third parties and costs incurred on a gross basis in the consolidated statements of income. Therefore, we recognize all royalties from customers as revenue and payments to Sony for its royalty share as operating expenses within the consolidated statements of income. Cost reimbursements for expenses incurred resulting from fulfilling the duties of the licensing agent are recorded as contra expenses. During the years ended December 31, 2022, 2021, and 2020, gross revenues recorded related to the Madison Arrangement were $14.5 million, $26.1 million, and $5.5 million, respectively. Net operating expenses related to the Madison Arrangement during the years ended December 31, 2022, 2021, and 2020 were $7.9 million, $18.9 million and $8.4 million, including $5.3 million, $11.9 million, and $2.5 million related to revenue sharing, respectively, and are reflected primarily within "*Licensing*" expenses in the consolidated statement of income.

Long-term debt

An affiliate of CPPIB Credit Investments Inc. ("CPPIB Credit"), a wholly owned subsidiary of Canada Pension Plan Investment Board, is a third-party investor in the Madison Arrangement. CPPIB Credit has made certain payments to Technicolor and Sony and has agreed to contribute cash to fund certain capital reserve obligations under the arrangement in exchange for a percentage of future revenues, specifically through September 11, 2030 in regard to the Technicolor patents.

Upon our assumption of Technicolor's rights and obligations under the Madison Arrangement, our relationship with CPPIB Credit met the criteria in ASC 470-10-25, *Sales of Future Revenues or Various Other Measures of Income* ("ASC 470"), which relates to cash received from an investor in exchange for a specified percentage or amount of revenue or other measure of income of a particular product line, business segment, trademark, patent, or contractual right for a defined period. Under this guidance, we recognized the fair value of our contingent obligation to CPPIB Credit, as of the acquisition date, as long-term debt in our consolidated balance sheet. This initial fair value measurement was based on the perspective of a market participant and includes significant unobservable inputs which are classified as Level 3 inputs within the fair value hierarchy. The fair value of the long-term debt as of December 31, 2022 is disclosed within Note 6, "*Concentration of Credit Risk and Fair Value of Financial Assets and Financial Liabilities*". Our repayment obligations are contingent upon future royalty revenues generated from the Madison Arrangement and there are no minimum or maximum payments under the arrangement.

Under ASC 470, amounts recorded as debt shall be amortized under the interest method. At each reporting period, we will review the discounted expected future cash flows over the life of the obligation. The Company made an accounting policy election to utilize the catch-up method when there is a change in the estimated future cash flows, whereby we will adjust the carrying amount of the debt to the present value of the revised estimated future cash flows, discounted at the original effective interest rate, with a corresponding adjustment recognized as interest expense within "*Interest expense*" in the consolidated statements of income. The effective interest rate as of the acquisition date was approximately 14.5%. This rate represents the discount rate that equates the estimated future cash flows with the fair value of the debt as of the acquisition date, and is used to compute the amount of interest to be recognized each period based on the estimated life of the future revenue streams. During the years ended December 31, 2022, 2021 and 2020, we recognized $3.6 million, $2.9 million, and $3.1 million, respectively, of interest expense related to this debt which is included within "*Interest expense*" in the consolidated statements of income. Any future payments made to CPPIB Credit, or additional proceeds received from CPPIB Credit, will decrease or increase the long-term debt balance accordingly.

Restricted cash

Under the Madison Arrangement, the parties reserve cash in bank accounts to fund our activities to manage the portfolios. These accounts are custodial accounts for which the funds are restricted for this purpose. As of December 31, 2022 and 2021, the Company had $9.7 million and $5.9 million, respectively, of restricted cash included within the consolidated balance sheet attributable to the Madison Arrangement. Refer to Note 5, "*Cash, Cash Equivalents, Restricted Cash and Marketable Securities*", for a reconciliation of cash, cash equivalents and restricted cash within the consolidated balance sheets.

Technicolor Contingent Consideration

As part of the Technicolor Acquisitions, we entered into a revenue-sharing arrangement with Technicolor that created a contingent consideration liability, which is accounted for under *ASC 450 - Contingencies* under the asset acquisition framework when the liability is deemed probable and estimable. Under the revenue-sharing arrangement, Technicolor receives 42.5% of future cash receipts from new licensing efforts from the Madison Arrangement only, subject to certain conditions and hurdles. As of December 31, 2022 and 2021, the contingent consideration liability from the revenue-sharing arrangement was deemed not probable and is therefore not reflected within the consolidated financial statements.

10. COMMITMENTS

Minimum future payments for accounts payable and other purchase commitments, excluding long-term operating leases for office space, as of December 31, 2022 were as follows (in thousands):

2023	$	12,000
2024		21
2025		—
2026		—
2027		—
Thereafter	$	—

Refer to Note 9, "*Obligations*," for details of the Company's long-term debt obligations and the revenue-sharing arrangement with Technicolor resulting from the Technicolor Patent Acquisition and the R&I Acquisition. Refer to Note 16, "*Leases*," for maturities of the Company's operating lease liabilities as of December 31, 2022.

Defined Benefit Plans

In connection with the Technicolor Patent Acquisition and the R&I Acquisition, we assumed certain defined benefit plans which are accounted for in accordance with *ASC 715 - Compensation - Retirement Benefits*. These plans include a retirement lump sum indemnity plan and jubilee plan, both of which provide benefit payments to employees based upon years of service and compensation levels. As part of the Company's announced restructuring plan, as discussed below in Note 20, "*Restructuring Activities*", the number of employees under the Company's plan was significantly reduced. The Company revalued the projected benefit obligation and recognized a $2.3 million gain on curtailment during 2021, which was included within "*Other (expense) income, net*" in the consolidated statement of income.

As of December 31, 2022 and 2021, the combined accumulated projected benefit obligation related to these plans totaled $3.4 million and $4.8 million, respectively. Service cost and interest cost for the combined plans totaled $0.3 million, $0.4 million and $0.6 million for the years ended December 31, 2022, 2021 and 2020, respectively. The weighted average discount rate and assumed salary increase rate for these plans were 3.8% and 3.0%, respectively. These plans are not required to be funded and were not funded as of December 31, 2022.

Expected future benefit payments under these plans as of December 31, 2022 were as follows (in thousands):

2023	$	254
2024		75
2025		71
2026		132
2027		259
2027-2031	$	2,320

11. LITIGATION AND LEGAL PROCEEDINGS

ARBITRATIONS AND COURT PROCEEDINGS

Lenovo

UK Proceedings

On August 27, 2019, the Company and certain of its subsidiaries filed a claim in the UK High Court against Lenovo Group Limited and certain of its subsidiaries. The claim, as amended, alleges infringement of five of the Company's patents relating to 3G and/or 4G/LTE standards: European Patent (UK) Nos. 2,363,008; 2,421,318; 2,485,558; 2,557,714; and 3,355,537. The Company is seeking, among other relief, injunctive relief to prevent further infringement of the asserted patents.

On July 29, 2021, the UK High Court issued its decision regarding the first technical trial finding European Patent (UK) No. 2,485,558 valid, infringed, and essential to Release 8 of LTE. Lenovo appealed this decision, and on January 13, 2023, the UK Court of Appeal upheld the UK High Court's findings that Lenovo is infringing on InterDigital's valid and essential patent. On January 6, 2022, the UK High Court issued its decision regarding the second technical trial finding European Patent (UK) No. 3,355,537 invalid, but essential and infringed but for the finding of invalidity. The Company appealed this decision as legally erroneous, and on February 9, 2023, the UK Court of Appeal allowed the appeal, finding that Lenovo is infringing on InterDigital's valid and essential patent. On January 31, 2023, the UK High Court issued its decision regarding the third technical trial finding European Patent (UK) No. 2,421,318 valid, essential, and infringed. The FRAND trial commenced on January 11, 2022 and concluded on February 11, 2022, and we are awaiting the decision. The fourth technical trial commenced on October 5, 2022 and concluded on October 13, 2022. The fifth technical trial is currently scheduled for April 22, 2024.

District of Delaware Patent Proceedings

On August 28, 2019, the Company and certain of its subsidiaries filed a complaint in the United States District Court for the District of Delaware (the "Delaware District Court") against Lenovo Holding Company, Inc. and certain of its subsidiaries alleging that Lenovo infringes eight of the Company's U.S. patents—U.S. Patent Nos. 8,085,665; 8,199,726; 8,427,954; 8,619,747; 8,675,612; 8,797,873; 9,203,580; and 9,456,449—by making, using, offering for sale, and/or selling Lenovo wireless devices with 3G and/or 4G LTE capabilities. As relief, InterDigital is seeking: (a) a declaration that the Company is not in breach of its relevant FRAND commitments with respect to Lenovo; (b) to the extent Lenovo does not agree to negotiate a worldwide patent license, does not agree to enter into binding international arbitration to set the terms of a FRAND license, and does not agree to be bound by the FRAND terms to be set by the UK High Court in the separately filed UK proceedings described above, an injunction prohibiting Lenovo from continued infringement; (c) damages, including enhanced damages for willful infringement and supplemental damages; and (d) attorneys' fees and costs.

On September 16, 2020, the Delaware District Court entered a schedule for the case, setting a patent jury trial. On March 8, 2021, the Delaware District Court held a claim construction hearing, and the court issued its order on May 10, 2021, construing various disputed terms. On March 24, 2021, the Delaware District Court consolidated the antitrust proceeding discussed below with this patent proceeding. Trial for the consolidated proceedings has been rescheduled from March 6, 2023 to July 10, 2023. On April 25, 2022, the parties filed a stipulation to stay only the claims relating to U.S. Patent No. 8,199,726. The stipulation was granted. On January 13, 2023, Lenovo filed a motion to sever and stay the Company's patent infringement claims, requesting that its Sherman Act and breach of FRAND claims proceed to trial. That motion is currently pending.

District of Delaware Antitrust Proceedings

On April 9, 2020, Lenovo (United States) Inc. and Motorola Mobility LLC filed a complaint in the Delaware District Court against the Company and certain of its subsidiaries. The complaint alleges that the Company defendants have violated Sections 1 and 2 of the Sherman Act in connection with, among other things, their licensing of 3G and 4G standards essential patents ("SEPs"). The complaint further alleges that the Company defendants have violated their commitment to the ETSI with respect to the licensing of 3G and 4G SEPs on FRAND terms and conditions. The complaint seeks, among other things (i) rulings that the Company defendants have violated Sections 1 and 2 of the Sherman Act and are liable for breach of their ETSI FRAND commitments, (ii) a judgment that the plaintiffs are entitled to a license with respect to the Company's 3G and 4G SEPs on FRAND terms and conditions, and (iii) injunctions against any demand for allegedly excessive royalties or enforcement of the Company defendants' 3G and 4G U.S. SEPs against the plaintiffs or their customers via patent infringement proceedings.

On June 22, 2020, the Company filed a motion to dismiss Lenovo's Sherman Act claims with prejudice, and to dismiss Lenovo's breach of contract claim with leave to re-file as a counterclaim in the Company's legal proceeding against Lenovo in the Delaware District Court discussed above.

On March 24, 2021, the Delaware District Court ruled on the Company's motion to dismiss. The Delaware District Court dismissed the Sherman Act Section 1 claim without prejudice, denied the motion to dismiss the Sherman Act Section 2 claim, and consolidated the Section 2 and breach of contract claims with Company's Delaware patent proceeding discussed above.

China Proceedings

On April 10, 2020, Lenovo (Beijing) Ltd. and certain of its affiliates filed a complaint against the Company and certain of its subsidiaries in the Beijing Intellectual Property Court (the "Beijing IP Court") seeking a determination of the FRAND royalty rates payable for the Company's Chinese 3G, 4G and 5G SEPs. On February 20, 2021, the Company filed an application challenging the jurisdiction of the Beijing IP Court to take up Lenovo's complaint. On November 15, 2021, the Beijing IP Court denied the jurisdictional challenge, and the Company filed an appeal with the Supreme People's Court of the People's Republic of China (the "SPC") on December 14, 2021. That appeal was denied by the SPC on September 5, 2022, and the case was sent back to the Beijing IP Court. On November 9, 2022, the Company filed a petition to stay the case. That petition is currently pending.

On November 26, 2021, the Company was informed that Lenovo had purportedly filed an additional complaint against the Company in the Wuhan Intermediate People's Court (the "Wuhan Court") seeking a determination of a global FRAND royalty rate for the period from 2024 to 2029 for the Company's 3G, 4G, and 5G SEPs. On April 16, 2022, the Company filed an application challenging, among other things, process of service and the jurisdiction of the Wuhan Court. The application remains pending.

Germany Proceedings

On March 25, 2022, March 28, 2022, and April 6, 2022, the Company and certain of its subsidiaries filed patent infringement claims in the Munich and Mannheim Regional Courts against Lenovo and certain of its affiliates, alleging infringement of European Patent Nos. 2,449,782; 2,452,498; 3,624,447 and 3,267,684 relating to HEVC standards. The Company is seeking, among other relief, injunctive relief to prevent further infringement of the asserted patents. The Mannheim Regional Court has scheduled hearings regarding European Patent Nos. 3,267,684 and 3,624,447 for April 21, 2023 and May 2, 2023, respectively. The Munich Regional Court has scheduled a hearing regarding European Patent No. 2,449,782 for September 14, 2024, and has not yet scheduled the remaining hearing.

Oppo, OnePlus and realme

UK Proceedings

On December 20, 2021, the Company filed a patent infringement claim in the UK High Court against Guangdong Oppo Mobile Telecommunications Corp., Ltd. ("Oppo") and certain of its affiliates, OnePlus Technology (Shenzhen) Co., Ltd. ("OnePlus") and certain of its affiliates, and realme Mobile Telecommunications (Shenzhen) Co., Ltd. ("realme") and certain of its affiliates, alleging infringement of European Patent (UK) Nos. 2,127,420; 2,421,318; 2,485,558; and 3,355,537 relating to cellular 3G, 4G/LTE or 5G standards. The Company is seeking, among other relief, injunctive relief to prevent further infringement of the asserted patents.

On January 19, 2022, Oppo filed a jurisdictional challenge with the UK High Court which the parties have agreed to adjourn pending the outcome of Oppo's jurisdiction challenge before the UK Supreme Court in a case involving Nokia. On December 8, 2022, the Company received confirmation that Oppo had dropped its jurisdictional challenge with the UK High Court.

The first technical trial is scheduled to commence on May 8, 2023. The second and third technical trials are scheduled to commence on June 26, 2023, and July 10, 2023, respectively. The willingness trial is expected to commence on October 23, 2023. The FRAND trial is scheduled to commence on February 26, 2024. The fourth technical trial is currently stayed pending the Company's appeal of the results of the second technical trial in the Lenovo UK Proceeding.

India Proceedings

On December 20, 2021 and December 22, 2021, the Company and certain of its subsidiaries filed patent infringement claims in the Delhi High Court in New Delhi, India against Oppo and certain of its affiliates, OnePlus and certain of its affiliates, and realme Mobile Telecommunication (India) Private Limited, alleging infringement of Indian Patent Nos. 262910, 295912, 313036, 320182, 319673, 242248, 299448, and 308108 relating to cellular 3G, 4G/LTE, and/or 5G, and HEVC standards. The Company is seeking, among other relief, injunctive relief to prevent further infringement of the asserted patents.

Germany Proceedings

On December 20, 2021, a subsidiary of the Company filed three patent infringement claims, two in the Munich Regional Court and one in the Mannheim Regional Court, against Oppo and certain of its affiliates, OnePlus and certain of its affiliates, and realme and certain of its affiliates, alleging infringement of European Patent Nos. 2,485,558; 2,127,420; and 2,421,318 relating to cellular 3G, 4G/LTE and/or 5G standards. The Company is seeking, among other relief, injunctive relief to prevent further infringement of the asserted patents. The Munich Regional Court held a hearing on December 14, 2022 regarding EP318 with a decision expected on March 1, 2023. The Munich Regional Court has also scheduled hearings for March 2, 2023 on EP420, and March 24, 2023 on EP558.

China Proceedings

On January 19, 2022, the Company was informed that Oppo had purportedly filed a complaint against the Company in the Guangzhou Intellectual Property Court (the "Guangzhou IP Court") seeking a determination of a global FRAND royalty rate for the Company's 3G, 4G, 5G, 802.11 and HEVC SEPs. On May 20, 2022, the Company filed an application challenging, among other things, process of service and the jurisdiction of the Guangzhou IP Court. On January 12, 2023, the Guangzhou IP Court denied the application. The Company plans to appeal the decision.

Spain Proceedings

On March 1, 2022, a subsidiary of the Company filed patent infringement claims in the Barcelona Commercial Courts against Oppo and certain of its affiliates, OnePlus and certain of its affiliates, and realme and certain of its affiliates. The Company filed its amended complaint on April 25, 2022, alleging infringement of European Patent Nos. 3,355,537; 2,485,558; 2,421,318; and 2,557,715 relating to cellular 3G, 4G/LTE and/or 5G standards. The Company is seeking, among other relief, injunctive relief to prevent further infringement of the asserted patents.

Samsung

The Company reached an agreement with Samsung Electronics Co. Ltd. ("Samsung") to enter into binding arbitration to determine the final terms of a renewed patent license agreement to certain of the Company's patents, which will be effective from January 1, 2023. The Company and Samsung have also agreed not to initiate certain claims against the other during the arbitration.

OTHER

We are party to certain other disputes and legal actions in the ordinary course of business, including arbitrations and legal proceedings with licensees regarding the terms of their agreements and the negotiation thereof. We do not currently believe that these matters, even if adversely adjudicated or settled, would have a material adverse effect on our financial condition, results of operations or cash flows. None of the preceding matters have met the requirements for accrual or disclosure of a potential range as of December 31, 2022.

12. COMPENSATION PLANS AND PROGRAMS

Compensation Programs

We use a variety of compensation programs to attract, retain and motivate our employees, and to more closely align employee compensation with company performance. These programs include, but are not limited to, short-term incentive awards tied to performance goals, cash awards to inventors for filed patent applications and patent issuances, and long-term incentives in the form of stock option awards, time-based RSU awards, performance-based RSU awards and cash awards.

Our long-term incentives typically include annual time-based RSU grants or cash awards with a three-year vesting period, as well as annual performance-based RSU grants or cash awards with a three to five-year performance period; as a result, in any one year, we are typically accounting for at least three active cycles. Additionally, from time to time, executive officers are awarded long term incentives or new hire grants that may include time-based RSUs, performance-based RSUs or options. We issue new shares of our common stock to satisfy our obligations under the share-based components of these programs. However, our Board of Directors has the right to authorize the issuance of treasury shares to satisfy such obligations in the future.

Equity Incentive Plans

On June 14, 2017, our shareholders adopted and approved the 2017 Equity Incentive Plan (the "2017 Plan"), under which officers, employees, non-employee directors and consultants can receive share-based awards such as RSUs, restricted stock and stock options as well as other stock or cash awards. The plan was amended in order to reserve an additional 1.8 million shares of our common stock for issuance under the 2017 Plan. Such amendment was adopted and approved by our shareholders on June 2, 2021.

From June 2009 through June 14, 2017, we granted equity awards pursuant to our 2009 Stock Incentive Plan (the "2009 Plan," and, together with the 2017 Plan, the "Equity Plans"), which was adopted and approved by our shareholders on June 4, 2009, and the material terms of which were re-approved on June 12, 2014. Upon the adoption of the 2017 Plan, the 2009 Plan was terminated and all shares remaining available for grant under the 2009 Plan were canceled. The number of shares available for issuance under the 2017 Plan, as amended, is equal to 4.2 million shares plus any shares subject to awards granted under the 2009 Plan that, on or after June 14, 2017, expire or otherwise terminate without having been exercised in full, or that are forfeited to or repurchased by us.

RSUs and Restricted Stock

We may issue RSUs to officers, employees, non-employee directors and consultants. Any cancellations of unvested RSUs granted under the Equity Plans will increase the number of shares remaining available for grant under the 2017 Plan. Time-based RSUs vest over periods generally ranging from 1 to 3 years from the date of the grant. Performance-based RSUs generally have a vesting period between 3 and 5 years. Milestone performance-based RSUs may vest at any time, upon achievement of the milestone goal, during the performance period, which is typically 5 years.

As of December 31, 2022, we had unrecognized compensation cost related to share-based awards of $24.7 million, at current performance accrual rates. For time-based grants with graded vesting, we expect to amortize the associated unrecognized compensation cost using an accelerated method. For time-based grants that cliff vest, we expect to amortize the associated unrecognized compensation cost as of December 31, 2022, on a straight-line basis generally over the remaining vesting period.

Vesting of performance-based RSU awards is subject to attainment of specific goals established by the Compensation Committee of the Board of Directors. Depending upon performance achievement against these goals, the number of shares that vest can be anywhere from 0 to 3 times the target number of shares.

Information with respect to current RSU activity is summarized as follows (in thousands, except per share amounts):

	Number of Unvested RSUs	Weighted Average Per Share Grant Date Fair Value
Balance at December 31, 2021	1,059	$ 57.43
Granted*	661	55.15
Forfeited	(165)	54.97
Vested	(375)	67.29
Balance at December 31, 2022	1,180	$ 53.36

** These numbers include fewer than 0.1 million RSUs credited on unvested RSU awards as dividend equivalents. Dividend equivalents accrue with respect to unvested RSUs when and as cash dividends are paid on the Company's common stock, and vest if and when the underlying RSUs vest. Granted amounts include performance-based RSU awards at their maximum potential payout.*

During 2022, 2021 and 2020, we granted approximately 0.7 million, 0.5 million and 0.4 million RSUs under the Equity Plans, respectively, with weighted-average per share grant date fair values of $55.15, $68.44 and $46.18, respectively, assuming target payout for the performance-based awards. The total vest date fair value of the RSUs that vested in 2022, 2021 and 2020 was $25.3 million, $22.6 million and $6.7 million, respectively. The weighted average per share grant date fair value of the awards that vested in 2022, 2021 and 2020 was $67.29, $62.44 and $65.06, respectively.

Other Equity Grants

We grant equity awards to non-management Board members and may grant equity awards to certain consultants.

Stock Options

The 2009 Plan allowed, and the 2017 Plan allows, for the granting of incentive and non-qualified stock options, as well as other securities. The administrator of the Equity Plans, the Compensation Committee of the Board of Directors, determines the number of options to be granted, subject to certain limitations set forth in the 2017 Plan. Since 2013, both incentive and non-qualified stock options have been granted annually as part of our long-term incentive programs, which have generally vested over three years. During the year ended December 31, 2018, performance-based options were granted for the first time. The number of performance-based options which vest, if at all, is anywhere from 0 to 3 times the target number of options subject to the attainment of performance goals measured either during or at the end of the performance period. Performance-based options typically have a vesting period between three and five years. Milestone performance options may vest at any time, upon achievement of the milestone goal, during the performance period, which is typically 5 years.

Under the terms of the Equity Plans, the exercise price per share of each option, other than in the event of options granted in connection with a merger or other acquisition, cannot be less than 100% of the fair market value of a share of common stock on the date of grant. Options granted under the Equity Plans are generally exercisable for a period of between 7 to 10 years from the date of grant and may vest on the grant date, another specified date, over a period of time and/or dependent upon the attainment of specified performance goals. We also have approximately 0.1 million options outstanding under a prior stock plan that do not expire.

The fair value for option awards is computed using the Black-Scholes pricing model, whose inputs and assumptions are determined as of the date of grant and which require considerable judgment. Expected volatility was based upon a combination of implied and historic volatilities. The weighted-average grant date fair value per option award granted during the years ended December 31, 2022, 2021 and 2020 was $20.28, $23.04, and $11.46, respectively, based upon the assumptions included in the table below:

	For the Year Ended December 31,		
	2022	**2021**	**2020**
Expected term (in years)	8.0	7.7	6.5
Expected volatility	36.3 %	35.7 %	37.5 %
Risk-free interest rate	2.2 %	1.3 %	0.6 %
Dividend yield	2.3 %	1.9 %	3.1 %

Information with respect to current year stock option activity is summarized as follows (in thousands, except per share amounts):

	Outstanding Options	**Weighted Average Exercise Price**
Balance at December 31, 2021	571	$ 59.31
Granted*	108	62.19
Forfeited	—	—
Exercised	(33)	53.69
Balance at December 31, 2022	646	$ 60.08

** Granted amounts include performance-based option awards at their maximum potential payout.*

The weighted average remaining contractual life of our outstanding options was 10.4 years as of December 31, 2022. Options with an indefinite contractual life, which were granted between 1983 and 1986 under a prior stock plan, were assigned an original life in excess of 50 years for purposes of calculating the weighted average remaining contractual life. The majority of these options have an exercise price between $9.00 and $11.63.

The total intrinsic value of our outstanding options as of December 31, 2022 was $4.4 million. Of the 0.6 million outstanding options as of December 31, 2022, 0.3 million were exercisable with a weighted-average exercise price of $47.19. Options exercisable as of December 31, 2022, had total intrinsic value of $4.4 million and a weighted average remaining contractual life of 12.8 years. The total intrinsic value of stock options exercised during the years ended December 31, 2022, 2021 and 2020 was $0.3 million, $3.6 million and $1.1 million, respectively. In 2022, we recorded cash received from the exercise of options of $1.2 million. Upon option exercise, we issued new shares of stock.

As of December 31, 2022, we had unrecognized compensation cost on our unvested stock options of $1.8 million, at current performance accrual rates. As of December 31, 2022 and 2021, we had approximately 0.1 million and 0.1 million options outstanding, respectively, that had exercise prices less than the fair market value of our stock at the respective balance sheet date. These options would have generated cash proceeds to the Company of $1.1 million and $3.5 million, respectively, if they had been fully exercised on those dates.

Defined Contribution Plans

We have a 401(k) plan (“Savings Plan”) wherein employees can elect to defer compensation within federal limits. We match a portion of employee contributions. Our 401(k) contribution expense was approximately $1.2 million, $1.3 million and $1.1 million for 2022, 2021 and 2020, respectively. Additionally, the company contributed $0.2 million, $3.4 million and $0.2 million in 2022, 2021 and 2020, respectively, to other defined contribution plans.

Under InterDigital's Deferred Compensation Plan ("Deferred Plan"), eligible US employees may make tax-deferred contributions that cannot be made under the 401(k) Plan due to Internal Revenue Service limitations. We match 50% of a participant's contributions up to 6% of the participants excess compensation pay. From time to time InterDigital makes discretionary company contributions to the Deferred Plan on behalf of a participant. The company contributed $3.0 million to the Deferred Plan in 2021. No such contributions were made in 2022.

13. TAXES

Our income tax provision (benefit) consists of the following components for 2022, 2021 and 2020 (in thousands):

	For the Year Ended December 31,		
	2022	2021	2020
Current			
Federal	$ 657	$ (291)	$ (26,092)
State	931	797	89
Foreign source withholding tax	5,754	22,415	26,229
	7,342	22,921	226
Deferred			
Federal	(17,022)	(43,250)	(28,692)
State	527	792	119
Foreign source withholding tax	34,655	34,905	21,699
	18,160	(7,553)	(6,874)
Total	$ 25,502	$ 15,368	$ (6,648)

The deferred tax assets and liabilities were comprised of the following components at December 31, 2022 and 2021 (in thousands):

	December 31,	
	2022	2021
Net operating losses	$ 114,975	$ 143,275
Tax credit carryforward	27,212	32,692
Debt amortization	24,029	12,659
Amortization and depreciation	19,608	19,810
Other employee benefits	10,542	10,973
Capitalized research and development	9,423	—
Stock compensation	4,803	4,774
Deferred revenue, net	3,457	22,875
Lease liability	3,402	4,773
Other	2,504	1,521
Right of use asset	(3,464)	(3,763)
	216,491	249,589
Less: valuation allowance	(122,218)	(151,522)
Net deferred tax asset	$ 94,273	$ 98,067

The following is a reconciliation of income taxes at the federal statutory rate with income taxes recorded by the Company for the years ended December 31, 2022, 2021 and 2020:

	For the Year Ended December 31,		
	2022	2021	2020
Tax at U.S. statutory rate	21.0 %	21.0 %	21.0 %
Change in valuation allowance	2.4 %	10.3 %	28.5 %
Non-deductible officers' compensation	1.5 %	8.4 %	0.7 %
Uncertain tax positions	1.5 %	5.5 %	(2.7)%
Other permanent differences	1.2 %	1.9 %	(1.9)%
State tax provision	1.1 %	2.6 %	0.6 %
Non-creditable withholding taxes	0.4 %	4.4 %	— %
Stock compensation	0.3 %	(1.2)%	1.1 %
Amended return benefit [(a)]	— %	(7.7)%	(65.0)%
Effect of rates different than statutory	(0.1)%	(2.2)%	(2.0)%
Research and development tax credits	(1.7)%	(1.3)%	(1.6)%
Foreign derived intangible income deduction	(5.3)%	(14.7)%	— %
Other	(0.6)%	— %	0.1 %
Total tax provision (benefit)	21.7 %	27.0 %	(21.2)%

(a) In 2020, a net discrete benefit of $20.9 million was recorded that primarily relates to the expected amendment of prior year returns to utilize a tax asset generated in the current year. In 2021, when the returns were filed, there was an additional benefit recorded.

Valuation Allowances and Net Operating Losses

We establish a valuation allowance for any portion of our deferred tax assets for which management believes it is more likely than not that we will be unable to utilize the assets to offset future taxes. Given the binary nature of our business, at this time we believe it is more likely than not that the majority of our state net operating losses and net operating losses in certain subsidiaries in France, as well as our non-wholly owned subsidiaries in the United States and United Kingdom will not be utilized; therefore we have maintained a near full valuation allowance against our state, French and United Kingdom net operating losses as of December 31, 2022. We also maintain a valuation allowance against certain temporary differences other than the net operating losses in these jurisdictions.

Uncertain Income Tax Positions

As of December 31, 2022, 2021 and 2020, we had $16.1 million, $15.7 million and $3.8 million, respectively, of unrecognized tax benefits that, if recognized, would impact the Company's effective tax rate. The total amount of unrecognized tax benefits could change within the next twelve months for a number of reasons including audit settlements, tax examination activities and the recognition and measurement considerations under this guidance.

During 2022, we established reserves of $1.1 million related to uncertainty arising from our ability to credit foreign withholding taxes in jurisdictions without a tax treaty with the United States. We also reduced the reserve previously established for the amended returns by $1.0 million for the benefit available in the current year had it not been included on the amended returns.

During 2021, after finalizing our amended return position we increased the reserve established in 2020 by $12.8 million. We also reversed reserves of $1.1 million previously established on 2017 research and development and manufacturing deduction credits as a result of the lapsing of stature of limitations for that tax year.

During 2020, we established reserves of $1.1 million related to uncertainty arising from our ability to generate the full benefit of the amended returns that utilize the current year tax asset. We also reversed reserves of $1.8 million previously established on 2016 research and development and manufacturing deduction credits as a result of the lapsing of the statute of limitations for that tax year.

The following is a roll forward of our total gross unrecognized tax benefits, which if reversed would impact the effective tax rate, for the fiscal years 2022 through 2020 (in thousands):

	December 31,		
	2022	2021	2020
Balance as of January 1	$ 15,694	$ 3,803	$ 4,456
Tax positions related to current year:			
Additions	1,264	46	1,062
Reductions	—	—	—
Tax positions related to prior years:			
Additions	45	12,831	37
Reductions	(951)	(4)	—
Lapses in statues of limitations	—	(982)	(1,752)
Balance as of December 31	$ 16,052	$ 15,694	$ 3,803

Our policy is to recognize interest and/or penalties related to income tax matters in income tax expense.

The Company and its subsidiaries are subject to United States federal income tax, foreign income and withholding taxes and income taxes from multiple state jurisdictions. Our federal income tax returns for 2006 to the present, with the exception of 2011 and 2012, are currently open and will not close until the respective statutes of limitations have expired. The 2014, 2015 and 2018-2020 Federal income tax returns are currently under audit by the IRS. The statutes of limitations generally expire three years following the filing of the return or in some cases three years following the utilization or expiration of net operating loss carry forwards. The statute of limitations applicable to our open federal returns will expire at the end of 2025. The Company is subject to French corporate income tax on certain subsidiaries. The statute of limitations applicable to our open French returns will expire in 2025. Excluding the Korea Competent Authority Proceeding and the Finland Competent Authority Proceeding described in the section below, specific tax treaty procedures remain open for certain jurisdictions for 2014 to the present. Many of our subsidiaries have filed state income tax returns on a separate company basis. To the extent these subsidiaries have unexpired net operating losses, their related state income tax returns remain open. These returns have been open for varying periods, some exceeding ten years. The total amount of state net operating losses is $1.5 billion.

Foreign Taxes

We pay foreign source withholding taxes on patent license royalties when applicable. We apply foreign source withholding tax payments against our United States federal income tax obligations to the extent we have foreign source income to support these credits. In 2022, 2021 and 2020, we paid $5.5 million, $21.7 million and $25.9 million in foreign source withholding taxes, respectively, and applied these payments as credits against our United States federal tax obligation.

Between 2014 and 2022, we paid approximately $134.6 million in foreign taxes to foreign governments that have tax treaties with the U.S., for which we have claimed foreign tax credits against our U.S. tax obligations, and for which the tax treaty procedures are still open. It is possible that as a result of tax treaty procedures, the U.S. government may reach an agreement with the related foreign governments that will result in a partial refund of foreign taxes paid with a related reduction in our foreign tax credits. Due to foreign currency fluctuations, any such agreement could result in foreign currency gain or loss.

On November 8, 2019, the Company received notification that its request for competent authority pertaining to Article 25 (Mutual Agreement Procedure) of the United States-Republic of Finland Income Tax Convention had been reviewed by the IRS and an agreement has been reached (the “Finland Competent Authority Proceeding”). As a result of this agreement, the Company does not anticipate any tax consequences.

14. NET INCOME PER SHARE

Basic Earnings Per Share ("EPS") is calculated by dividing net income available to common shareholders by the weighted-average number of common shares outstanding for the period. Diluted EPS reflects the potential dilution that could occur if options or other securities with features that could result in the issuance of common stock were exercised or converted to common stock. The following table reconciles the numerator and the denominator of the basic and diluted net income per share computation (in thousands, except for per share data):

	For the Year Ended December 31,		
	2022	2021	2020
Net income applicable to common shareholders	$ 93,693	$ 55,295	$ 44,801
Weighted-average shares outstanding:			
Basic	30,106	30,764	30,776
Dilutive effect of stock options, RSUs, convertible securities and warrants	379	489	282
Diluted	30,485	31,253	31,058
Earnings Per Share:			
Basic	$ 3.11	$ 1.80	$ 1.46
Dilutive effect of stock options, RSUs, convertible securities and warrants	(0.04)	(0.03)	(0.02)
Diluted	$ 3.07	$ 1.77	$ 1.44

Certain shares of common stock issuable upon the exercise or conversion of certain securities have been excluded from our computation of earnings per share because the strike price or conversion rate, as applicable, of such securities was greater than the average market price of our common stock for the years ended December 31, 2022, 2021 and 2020, as applicable, and, as a result, the effect of such exercise or conversion would have been anti-dilutive. Set forth below are the securities and the weighted average number of shares of common stock underlying such securities that were excluded from our computation of earnings per share for the periods presented (in thousands):

	For the Year Ended December 31,		
	2022	2021	2020
Restricted stock units and stock options	504	322	146
Convertible securities	—	—	5,143
Warrants	6,444	4,921	5,662
Total	6,948	5,243	10,951

15. EQUITY TRANSACTIONS

Repurchase of Common Stock

In June 2014, our Board of Directors authorized a $300 million share repurchase program (the “Share Repurchase Program”). Subsequently our Board of Directors authorized five $100 million increases to the program, respectively, and an additional $333 million in December 2022, bringing the total amount of the Share Repurchase Program to $1.1 billion. The Company may repurchase shares under the Share Repurchase Program through open market purchases, pre-arranged trading plans or privately negotiated purchases.

The table below sets forth the total number of shares repurchased and the dollar value of shares repurchased under the Share Repurchase Program (in thousands). As of December 31, 2022, there was approximately $400.0 million remaining under the share repurchase authorization.

	Share Repurchase Program	
	# of Shares	Value
2022	1,224	$ 74,445
2021	458	30,000
2020	6	349
2019	2,962	196,269
2018	1,478	110,505
2017	107	7,693
2016	1,304	64,685
2015	1,836	96,410
2014	3,554	152,625
Total	12,929	$ 732,981

Dividends

Cash dividends on outstanding common stock declared in 2022 and 2021 were as follows (in thousands, except per share data):

2022	**Per Share**	**Total**	**Cumulative by Fiscal Year**
First quarter	$ 0.35	$ 10,803	$ 10,803
Second quarter	0.35	10,380	21,183
Third quarter	0.35	10,382	31,565
Fourth quarter	0.35	10,384	$ 41,949
	$ 1.40	$ 41,949	
2021			
First quarter	$ 0.35	$ 10,766	$ 10,766
Second quarter	0.35	10,794	21,560
Third quarter	0.35	10,740	32,300
Fourth quarter	0.35	10,741	$ 43,041
	$ 1.40	$ 43,041	

In September 2017, we announced that our Board of Directors had approved an increase in the Company’s quarterly cash dividend to $0.35 per share. We currently expect to continue to pay dividends comparable to our quarterly $0.35 per share cash dividend in the future; however, continued payment of cash dividends and changes in the Company's dividend policy will depend on the Company's earnings, financial condition, capital resources and capital requirements, alternative uses of capital, restrictions imposed by any existing debt, economic conditions and other factors considered relevant by our Board of Directors.

16. LEASES

The Company enters into operating leases primarily for real estate to support research and development ("R&D") sites and general office space in North America, with additional locations in Europe and Canada. The Company does not currently have any finance leases. Certain of our leases include options to extend the lease at our discretion at the end of the lease term, or terminate the lease early subject to certain conditions and penalties. We do not include any renewal options in our lease terms for calculating our lease liabilities, as the renewal options allow us to maintain operational flexibility and we are not reasonably certain we will exercise these options.

At the inception of an arrangement, the Company determines whether the arrangement is or contains a lease based on the specific facts and circumstances present. Operating lease liabilities and their corresponding right-of-use assets are recorded based on the present value of lease payments over the expected lease term. The interest rate implicit in lease contracts is typically not readily determinable, and, as such, the Company utilizes its incremental borrowing rate as the discount rate based on information available on the lease commencement date. Our incremental borrowing rate represents the rate we would incur to borrow on a collateralized basis over a similar term for an amount equal to the lease payments in a similar economic environment. The table below includes the balances of operating lease right-of-use assets and operating lease liabilities as of December 31, 2022 and 2021 (in thousands):

	Balance Sheet Classification	December 31, 2022	December 31, 2021
Assets			
Operating lease receivable - current	Prepaid and other current assets	$ —	$ 51
Operating lease right-of-use assets, net	Other non-current assets, net	18,034	17,851
Total Lease Assets		$ 18,034	$ 17,902
Liabilities			
Operating lease liabilities - Current	Other accrued expenses	$ 3,167	$ 3,844
Operating lease liabilities - Noncurrent	Other long-term liabilities	19,923	17,780
Total Lease Liabilities		$ 23,090	$ 21,624

The components of lease costs which were included within operating expenses in our consolidated statement of income were as follows (in thousands):

	For the Year Ended December 31,		
	2022	2021	2020
Operating lease cost	$ 6,243	$ 5,188	$ 5,442
Short-term lease cost	343	442	726
Variable lease cost	1,522	1,625	1,764

For the years ended December 31, 2022 and 2021, sublease income was insignificant. Cash paid for amounts included in the measurement of operating lease liabilities for the year ended December 31, 2022 and 2021 was $5.2 million and $4.0 million, respectively, and was included in net cash provided by operating activities in our consolidated statement of cash flows. As of December 31, 2022, the weighted average remaining operating lease term was 6.9 years and the weighted average discount rate used to determine the operating lease liabilities was 6.1%. As of December 31, 2022, there have been no leases entered into that have not yet commenced.

The maturities of our operating lease liabilities as of December 31, 2022, excluding short-term leases with terms less than 12 months, were as follows (in thousands):

Maturity of Operating Lease Liabilities	
2023	$ 4,469
2024	3,957
2025	4,108
2026	3,975
2027	3,842
Thereafter	8,049
Total lease payments	$ 28,400
Less: Imputed interest	(5,310)
Present value of lease liabilities	$ 23,090

17. OTHER (EXPENSE) INCOME, NET

The amounts included in "*Other (expense) income, net*" in the consolidated statements of income for the year ended December 31, 2022, 2021 and 2020 were as follows (in thousands):

	For the Year Ended December 31,		
	2022	2021	2020
Interest and investment income	$ 14,452	$ 1,690	$ 5,661
Loss on extinguishment of long-term debt	(11,190)	—	—
Other	(6,719)	9,885	11,263
Other (expense) income, net	$ (3,457)	$ 11,575	$ 16,924

Interest and investment income increased to $14.5 million primarily due to market conditions driving higher yields on the Company's short-term investments. Refer to Note 9, "*Obligations,*" for further information on the $11.2 million loss on extinguishment of long-term debt recognized during the year ended December 31, 2022.

The change in Other was primarily due to fair value adjustments of our investments resulting in a $3.7 million net loss in 2022, compared to $9.1 million and $6.9 million net gains in 2021 and 2020, respectively. Other also includes foreign currency translation losses arising from euro translation of our foreign subsidiaries of $3.9 million and $3.0 million in 2022 and 2021, respectively, and a $4.6 million foreign currency translation gain in 2020. Additionally, we recognized a $1.9 million gain on a contract termination in 2021.

18. VARIABLE INTEREST ENTITIES

As further discussed below, we are the primary beneficiary of three variable interest entities. As of December 31, 2022, the combined book values of the assets and liabilities associated with these variable interest entities included in our consolidated balance sheet were $17.5 million and $1.8 million, respectively. Assets included $4.4 million of cash and cash equivalents, $4.0 million of accounts receivable and prepaid assets, and $9.1 million of patents, net. As of December 31, 2021, the combined book values of the assets and liabilities associated with these variable interest entities included in our consolidated balance sheet were $27.1 million and $2.5 million, respectively. Assets included $5.1 million of cash and cash equivalents, $4.0 million of accounts receivable and prepaid assets, and $18.0 million of patents, net.

Convida Wireless

Convida Wireless was launched in 2013 and most recently renewed in 2021 to combine Sony's consumer electronics expertise with our pioneering IoT expertise to drive IoT communications and connectivity. Based on the terms of the agreement, the parties will contribute funding and resources for additional research and platform development, which we will perform.

Convida Wireless is a variable interest entity. Based on our provision of research and platform development services to Convida Wireless, we have determined that we remain the primary beneficiary for accounting purposes and will continue to consolidate Convida Wireless. For the years ended December 31, 2022, 2021 and 2020, we have allocated approximately $1.6 million, $10.8 million and $5.7 million, respectively, of Convida Wireless' net loss to noncontrolling interests held by other parties.

During 2021, we recognized a $13.2 million impairment on the patents within the Convida portfolio, resulting from our restructuring activities as described in Note 20, "*Restructuring Activities*", which is included within "*Restructuring activities*" expenses in the consolidated statement of income. The patents held for sale are recorded at fair value on December 31, 2022 and are included within "*Prepaid and other current assets*" in the consolidated balance sheet.

Chordant

On January 31, 2019, we launched the Company's Chordant™ business as a standalone company. Chordant is a variable interest entity and we have determined that we are the primary beneficiary for accounting purposes and consolidate Chordant. For the years ended December 31, 2022, 2021 and 2020, we have allocated approximately $0.0 million, $2.3 million, and $1.1 million, respectively, of Chordant's net loss to noncontrolling interests held by other parties. Chordant ceased operations in 2021.

Signal Trust for Wireless Innovation

During 2013, we announced the establishment of the Signal Trust for Wireless Innovation (the "Trust"), the goal of which was to monetize a patent portfolio primarily related to 3G and LTE cellular infrastructure. During fourth quarter 2021, the Trust was fully dissolved and all remaining assets were transferred to us as majority beneficiary.

The Trust was accounted for as a variable interest entity. Based on the terms of the trust agreement, we determined that we were the primary beneficiary for accounting purposes and included the Trust in our consolidated financial statements up to the date of dissolution. We recorded a $2.4 million charge within the "*Licensing*" line of our consolidated statements of income in 2020 associated with the wind down of the Trust.

19. OTHER ASSETS

The amounts included in "*Prepaid and other current assets*" in the consolidated balance sheet as of December 31, 2022 and 2021 were as follows (in thousands):

	December 31,	
	2022	2021
Tax receivables	$ 64,117	$ 57,127
Restricted cash	9,682	5,861
Prepaid assets	9,044	5,479
Patents held for sale	4,000	4,000
Other current assets	2,873	5,078
Total Prepaid and other current assets	$ 89,716	$ 77,545

The amounts included in "*Other non-current assets, net*" in the consolidated balance sheet as of December 31, 2022 and 2021 were as follows (in thousands):

	December 31,	
	2022	2021
Tax receivables	$ 29,370	$ 30,026
Goodwill	22,421	22,421
Long-term investments	19,593	21,280
Right-of-use assets	18,034	17,851
Other non-current assets	6,302	10,923
Total Other non-current assets, net	$ 95,720	$ 102,501

20. RESTRUCTURING ACTIVITIES

During second quarter 2021, the Company began the process of a strategic review and undertook certain actions in order to increase focus on core technologies and markets.

On June 10, 2021, the Company announced that, as a result of a strategic review of its research and innovation priorities, it commenced the process of a collective economic layoff in which it proposed a reduction in force of its research and innovation unit. All notices of termination have been issued to the impacted employees. This action resulted in a reduction of employees under the benefit plans, and as a result the Company recognized a $2.3 million curtailment gain during 2021. This curtailment gain was included within "*Other (expense) income, net*" in the consolidated statement of income.

During June 2021, Chordant began the process of ceasing operations. The Company implemented a reduction in workforce action in second quarter 2021.

Additionally, in June 2021, a non-controlled subsidiary that we consolidate for financial statement purposes approved a plan to sell certain patents. The proceeds from the sale of these patents will contribute to funding Convida's operations. These assets were evaluated as a separate asset group and reclassified as assets held for sale. Upon the reclassification, the patents to be sold are recorded at fair value, which resulted in the Company recognizing a $13.2 million impairment in 2021. We determined the fair value based upon evaluation of market conditions. The patents held for sale are included within "*Prepaid and other current assets*" in the consolidated balance sheet.

In October 2021, we expanded our restructuring efforts to include general and administrative functions largely centered in the U.S., which resulted in a further reduction in force as well as cuts to our non-labor expenses. These employees were provided notification of termination during fourth quarter 2021.

As part of the Company's ongoing evaluation of its flexible work policy and the impact of returning to the office, the Company has evaluated its current office space footprint and its expected needs going forward. As the result of this evaluation, during 2022, we recognized a $2.4 million impairment, comprised of $0.4 million of property and equipment and $2.0 million of right of use assets, related to the abandonment of portions of three of our leased properties, which was included within "*Restructuring activities*" in the condensed consolidated statement of income.

Restructuring charges are estimated based on information available at the time such charges are recorded. Due to the inherent uncertainty involved in estimating restructuring expenses, actual amounts incurred for such activities may differ from amounts initially estimated. The Company may also incur additional costs not currently contemplated due to events that may occur as a result of, or that are associated with, the reduction in force or other restructuring activities.

The restructuring charges associated with the above activities totaling $3.3 million and $27.9 million in 2022 and 2021, respectively, are presented net of any reimbursement arrangements and include $0.5 million and $1.7 million, respectively, of outside services and other associated costs related to non-recurring consultant and legal fees.

The Company does not anticipate further significant restructuring charges, however these charges are estimated based on information available at the time such charges are recorded. Due to the inherent uncertainty involved in estimating restructuring expenses, actual amounts incurred for such activities may differ from amounts initially estimated.

As of December 31, 2022, the Company's restructuring liability was $4.5 million and was included in "*Other accrued expenses*" on our condensed consolidated balance sheet. As of December 31, 2021, the Company's restructuring liability was $18.3 million, of which $12.5 million was included in "*Other accrued expenses*" and $5.8 million was included in "*Other long-term liabilities*" on our condensed consolidated balance sheet. The following table presents the change in our restructuring liability during the period (in thousands):

Balance as of December 31, 2021	$	18,281
Accrual		852
Cash payments		(13,761)
Other		(877)
Balance as of December 31, 2022	$	4,495

The restructuring expenses included in "*Restructuring activities*" in the consolidated statements of income for the years ending December 31, 2022 and 2021 were as follows (in thousands):

	For the Year Ended December 31,	
	2022	**2021**
Asset impairment	$ 2,427	$ 13,228
Severance and other benefits	305	22,616
Outside services and other associated costs	548	1,671
Reimbursement arrangements	—	(9,638)
Total	$ 3,280	$ 27,877

21. SUBSEQUENT EVENTS

On January 23, 2023, the Company commenced a modified "Dutch auction" tender offer (the "Tender Offer") to purchase for cash up to $200.0 million of its common stock at a price per share not less than $60.00 and not greater than $69.00 less any applicable withholding taxes and without interest, using available cash on hand. On February 6, 2023, the Company amended the Tender Offer to increase the price range to a price per share not less than $65.25 and not greater than $75.00 less any applicable withholding taxes and without interest. The Tender Offer will expire at 11:59 p.m., New York City time, on February 17, 2023, unless extended or terminated. If the Tender Offer is fully subscribed, the Company will purchase between 2.7 million shares and 3.1 million shares. This Annual Report on Form 10-K does not constitute an offer to sell, or a solicitation to purchase, any of our securities.

Item 9. ***CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE.***

None.

Item 9A. *CONTROLS AND PROCEDURES.*

Evaluation of Disclosure Controls and Procedures

The Company's Chief Executive Officer and its Chief Financial Officer, with the assistance of other members of management, have evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) as of December 31, 2022. Based on that evaluation, the Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures were effective to ensure that the information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms and to ensure that the information required to be disclosed by us in the reports that we file or submit under the Exchange Act is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

Management's Annual Report on Internal Control Over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. The Company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America. Internal control over financial reporting includes those policies and procedures that:

- Pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the company;
- Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with accounting principles generally accepted in the United States of America, and that receipts and expenditures of the company are being made only in accordance with authorization of management and directors of the company; and
- Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the company's assets that could have a material effect on the consolidated financial statements.

Management, including the Chief Executive Officer and Chief Financial Officer, assessed the effectiveness of internal control over financial reporting as of December 31, 2022. Management based this assessment on criteria for effective internal control over financial reporting described in "*Internal Control — Integrated Framework"* issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013). Based on this assessment, management determined that, as of December 31, 2022, the Company maintained effective internal control over financial reporting.

The effectiveness of the Company's internal control over financial reporting as of December 31, 2022 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report that appears under Part II, Item 8, of this Form 10-K.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting during fourth quarter 2022 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. *OTHER INFORMATION.*

None.

Item 9C. *DISCLOSURES REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS.*

Not applicable.

PART III

Item 10. ***DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE.***

The information required by this item is incorporated by reference to the information following the captions "Election of Directors," "EXECUTIVE OFFICERS," "Section 16(a) Beneficial Ownership Reporting Compliance," "Code of Ethics," "Nominating and Corporate Governance Committee" and "Audit Committee" in the definitive proxy statement to be filed pursuant to Regulation 14A in connection with our 2023 annual meeting of shareholders not later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K (the "Proxy Statement").

Item 11. ***EXECUTIVE COMPENSATION.***

The information required by this item is incorporated by reference to the information following the captions "EXECUTIVE COMPENSATION" and "DIRECTOR COMPENSATION" in the Proxy Statement.

Item 12. ***SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS.***

The information required by this item is incorporated by reference to the information following the captions "EQUITY COMPENSATION PLAN INFORMATION" and "SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT" in the Proxy Statement.

Item 13. ***CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE.***

The information required by this item is incorporated by reference to the information following the captions "CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS" and "Director Independence" in the Proxy Statement.

Item 14. ***PRINCIPAL ACCOUNTANT FEES AND SERVICES.***

The information required by this item is incorporated by reference to the information following the captions "Fees of Independent Registered Public Accounting Firm" and "Audit Committee Pre-Approval Policy for Audit and Non-Audit Services of Independent Registered Public Accounting Firm" in the Proxy Statement.

PART IV

Item 15. ***EXHIBITS AND FINANCIAL STATEMENT SCHEDULES.***

(a) The following documents are filed as a part of this Form 10-K:

(1) Financial Statements.

The information required by this item begins on Page 61.

(2) Financial Statement Schedules.

The following financial statement schedule of InterDigital is included herewith and should be read in conjunction with the Financial Statements included in this Item 15.

Valuation and Qualifying Accounts

	Balance Beginning of Period	Increase/ (Decrease)	Reversal of Valuation Allowance	Balance End of Period
2022 valuation allowance for deferred tax assets	$ 151,522	$ (29,305) (a)	$ —	$ 122,217
2021 valuation allowance for deferred tax assets	$ 144,367	$ 7,155 (b)	$ —	$ 151,522
2020 valuation allowance for deferred tax assets	$ 133,797	$ 10,570 (b)	$ —	$ 144,367
2022 reserve for uncollectible accounts	$ 322	$ —	$ (322)	$ —
2021 reserve for uncollectible accounts	$ —	$ 322	$ —	$ 322
2020 reserve for uncollectible accounts	$ 537	$ (537) (c)	$ —	$ —

(a) The decrease was primarily related to the decrease in Pennsylvania state tax rate.

(b) The increase was primarily necessary to maintain a full, or near full, valuation allowance against our state deferred tax assets and deferred tax assets for certain subsidiaries in France as well as a non-wholly owned subsidiary in the United States and the United Kingdom.

(c) The decrease relates to the write-off of a previously recorded reserve during 2019.

(3) Exhibits.

See Item 15(b) below.

(b)

Exhibit Number	Exhibit Description
*3.1	Amended and Restated Articles of Incorporation of InterDigital (Exhibit 3.1 to InterDigital's Current Report on Form 8-K filed on June 7, 2011).
*3.2	Amended and Restated Bylaws of InterDigital (Exhibit 3.1 to InterDigital's Current Report on Form 8-K filed on July 15, 2022).
*4.1	Specimen Stock Certificate of InterDigital (Exhibit 4.3 to InterDigital's Quarterly Report on Form 10-Q filed on April 28, 2011).
*4.2	Description of InterDigital's Securities (Exhibit 4.2 to InterDigital's Annual Report on Form 10-K for the year ended December 31, 2020).
*4.3	Indenture, dated June 3, 2019, between InterDigital and The Bank of New York Mellon Trust Company, N.A., as trustee (Exhibit 4.1 to InterDigital's Current Report on Form 8-K filed on June 3, 2019).
*4.4	Indenture, dated May 27, 2022, between InterDigital, Inc. and The Bank of New York Mellon Trust Company, N.A., as trustee (Exhibit 4.1 to InterDigital's Form 8-K filed on May 27, 2022).
*4.5	Form of 2.00% Senior Convertible Note due 2024 (included in Exhibit 4.1 to InterDigital's Current Report on Form 8-K filed on June 3, 2019).
*4.6	Form of 3.50% Senior Convertible Note due 2027 (included in Exhibit 4.1 to InterDigital's Current Report on Form 8-K filed on May 27, 2022).

	Benefit Plans
†*10.1	Non-Qualified Stock Option Plan, as amended (Exhibit 10.4 to InterDigital's Annual Report on Form 10-K for the year ended December 31, 1991).
†*10.2	Amendment to Non-Qualified Stock Option Plan (Exhibit 10.31 to InterDigital's Quarterly Report on Form 10-Q filed on August 14, 2000).
†*10.3	Amendment to Non-Qualified Stock Option Plan, effective October 24, 2001 (Exhibit 10.6 to InterDigital's Annual Report on Form 10-K for the year ended December 31, 2001).
†*10.4	2009 Stock Incentive Plan (Exhibit 99.1 to InterDigital's Registration Statement on Form S-8 filed on June 4, 2009 (File No. 333-159743)).
†*10.5	Amendment to 2009 Stock Incentive Plan, effective as of June 12, 2013 (Exhibit 10.1 to InterDigital's Quarterly Report on Form 10-Q filed on July 26, 2013).
†*10.6	2015 Amendment to 2009 Stock Incentive Plan, effective as of June 11, 2015 (Exhibit 10.1 to InterDigital's Quarterly Report on Form 10-Q filed on July 30, 2015).
†*10.7	2009 Stock Incentive Plan, Term Sheet and Standard Terms and Conditions for Stock Options (Exhibit 10.5 to InterDigital's Current Report on Form 8-K filed on January 28, 2013).
†*10.8	2009 Stock Incentive Plan, Term Sheet and Standard Terms and Conditions for Time-Based Restricted Stock Units (Exhibit 10.3 to InterDigital's Quarterly Report on Form 10-Q filed on April 29, 2015).
†*10.9	2009 Stock Incentive Plan, Term Sheet and Standard Terms and Conditions for Performance-Based Restricted Stock Units (Exhibit 10.4 to InterDigital's Quarterly Report on Form 10-Q filed on April 29, 2015).
†*10.10	2009 Stock Incentive Plan, Term Sheet and Standard Terms and Conditions for Stock Options (Exhibit 10.5 to InterDigital's Quarterly Report on Form 10-Q filed on April 29, 2015).
†*10.11	2009 Stock Incentive Plan, Term Sheet for Restricted Stock Units (Non-Employee Directors) (Exhibit 10.3 to InterDigital's Quarterly Report on Form 10-Q filed on July 26, 2013).
†*10.12	2009 Stock Incentive Plan, Standard Terms and Conditions for Restricted Stock Units (Non-Employee Directors) (Exhibit 10.4 to InterDigital's Quarterly Report on Form 10-Q filed on July 26, 2013).
†*10.13	2017 Equity Incentive Plan (Exhibit 10.1 to InterDigital's Registration Statement on Form S-8 filed on June 15, 2017 (File No. 333-218755)).
†*10.14	2017 Equity Incentive Plan, Form of Agreement for Time-Based Restricted Stock Unit Awards (Exhibit 10.2 to InterDigital's Current Report on Form 8-K filed on June 16, 2017).
†*10.15	2017 Equity Incentive Plan, Form of Agreement for Performance-Based Restricted Stock Unit Awards (Exhibit 10.3 to InterDigital's Current Report on Form 8-K filed on June 16, 2017).
†*10.16	2017 Equity Incentive Plan, Form of Agreement for Option Awards (Exhibit 10.4 to InterDigital's Current Report on Form 8-K filed on June 16, 2017).
†*10.17	2017 Equity Incentive Plan, Form of Agreement for Restricted Stock Unit Awards to Non-Employee Directors (Exhibit 10.18 to InterDigital's Annual Report on Form 10-K for the year ended December 31, 2017).
†*10.18	Compensation Program for Non-Management Directors (as amended March 2017) (Exhibit 10.1 to InterDigital's Current Report on Form 8-K filed on April 3, 2017).
†*10.19	Compensation Program for Non-Management Directors (as amended June 2019) (Exhibit 10.20 to InterDigital's Annual Report on Form 10-K for the year ended December 31, 2019).
†*10.20	Deferred Compensation Plan (Exhibit 10.1 to InterDigital's Current Report on Form 8-K filed on June 18, 2013).
†*10.21	2017 Equity Incentive Plan, Form of Term Sheet for 2018 Performance-Based Restricted Stock Unit Awards (Exhibit 10.1 to InterDigital, Inc.'s Current Report on Form 8-K filed on July 9, 2018).
†*10.22	2017 Equity Incentive Plan, Form of Term Sheet for 2018 Performance-Based Stock Option Awards (Exhibit 10.2 to InterDigital, Inc.'s Current Report on Form 8-K filed on July 9, 2018).
†*10.23	2017 Equity Incentive Plan, Form of Agreement for Time-Based Restricted Stock Unit Awards (revised October 2018) (Exhibit 10.3 to InterDigital's Quarterly Report on Form 10-Q filed on November 1, 2018).

†*10.24	2017 Equity Incentive Plan, Form of Agreement for Performance-Based Restricted Stock Unit Awards (revised October 2018) (Exhibit 10.4 to InterDigital's Quarterly Report on Form 10-Q filed on November 1, 2018).
†*10.25	2017 Equity Incentive Plan, Form of Agreement for Stock Option Awards (revised October 2018) (Exhibit 10.5 to InterDigital's Quarterly Report on Form 10-Q filed on November 1, 2018).
†*10.26	InterDigital Inc. Executive Severance and Change in Control Policy (Exhibit 10.6 to InterDigital's Quarterly Report on Form 10-Q filed on November 1, 2018).
	Employment-Related Agreements
†10.27	Form of Indemnity Agreement between InterDigital and certain of its directors and executive officers (Exhibit 10.27 to InterDigital's Annual Report on Form 10-K for the year ended December 31, 2021).
†*#10.28	Executive Agreement between InterDigital International, LLC and Eeva Hakoranta, dated June 2, 2020 (Exhibit 10.28 to InterDigital's Annual Report on Form 10-K for the year ended December 31, 2021).
†*10.29	Offer Letter Between InterDigital and Liren Chen dated March 13, 2021 (Exhibit 10.2 to InterDigital's Quarterly Report on Form 10-Q filed on May 6, 2021).
†*10.30	Retirement & Transition Agreement and Release, dated March 16, 2021, by and between InterDigital and William J. Merritt, (Exhibit 10.1 to InterDigital's Quarterly Report on Form 10-Q filed on May 6, 2021).
†*10.31	Retirement & Transition Agreement and Release, dated October 19, 2021, by and between InterDigital and Richard L. Gulino (Exhibit 10.31 to InterDigital's Annual Report on Form 10-K for the year ended December 31, 2021).
†*#10.32	Offer Letter between InterDigital, Inc. and Rajesh Pankaj dated June 16, 2022 (Exhibit 10.5 to InterDigital's Quarterly Report on Form 10-Q filed on August 4, 2022).
	Other Material Contracts
*10.33	Form of Convertible Note Hedge Transaction Confirmation (Exhibit 10.2 to InterDigital's Current Report on Form 8-K filed on June 3, 2019).
*10.34	Form of Warrant Transaction Confirmation (Exhibit 10.3 to InterDigital's Current Report on Form 8-K filed on June 3, 2019).
*10.35	Purchase Agreement, dated May 24, 2022, between InterDigital, Inc. and BofA Securities Inc. and Jefferies LLC, as representatives of the several initial purchasers named therein (Exhibit 10.1 to InterDigital's Form 8-K filed on May 27, 2022).
*10.36	Form of Convertible Note Hedge Transaction Confirmation (Exhibit 10.2 to InterDigital's Current Report on Form 8-K filed on May 27, 2022).
*10.37	Form of Warrant Transaction Confirmation (Exhibit 10.3 to InterDigital's Current Report on Form 8-K filed on May 27, 2022).
*10.38	Form of Unwind Agreement (Exhibit 10.4 to InterDigital's Form 8-K filed on May 27, 2022).
21	Subsidiaries of InterDigital.
23.1	Consent of PricewaterhouseCoopers LLP.
31.1	Certification of Principal Executive Officer pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934, as amended.
31.2	Certification of Principal Financial Officer pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934, as amended.
32.1	Certification of Principal Executive Officer pursuant to 18 U.S.C. Section 1350. +
32.2	Certification of Principal Financial Officer pursuant to 18 U.S.C. Section 1350. +
101.INS	XBRL Instance Document - The instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
101.SCH	Inline XBRL Taxonomy Extension Schema Document.
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document.
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document.
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document.
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document.
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).

*	Incorporated by reference to the previous filing indicated.
†	Management contract or compensatory plan or arrangement.
#	Certain personally identifiable information has been omitted from this exhibit pursuant to Item 601(a)(6) under Regulation S-K.
+	This exhibit will not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (15 U.S.C. 78r), or otherwise subject to the liability of that section. Such exhibit will not be deemed to be incorporated by reference into any filing under the Securities Act or Securities Exchange Act, except to the extent that InterDigital, Inc. specifically incorporates it by reference.

Item 16. ***FORM 10-K SUMMARY.***

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) 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.

INTERDIGITAL, INC.

Date: February 15, 2023 By: /s/ Liren Chen
Liren Chen
President and Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Date: February 15, 2023 /s/ S. Douglas Hutcheson
S. Douglas Hutcheson, Chairman of the Board of Directors

Date: February 15, 2023 /s/ Derek Aberle
Derek Aberle, Director

Date: February 15, 2023 /s/ Joan H. Gillman
Joan H. Gillman, Director

Date: February 15, 2023 /s/ John A. Kritzmacher
John A. Kritzmacher, Director

Date: February 15, 2023 /s/ Pierre-Yves Lesaicherre
Pierre-Yves Lesaicherre, Director

Date: February 15, 2023 /s/ John D. Markley, Jr.
John D. Markley, Jr., Director

Date: February 15, 2023 /s/ Jean F. Rankin
Jean F. Rankin, Director

Date: February 15, 2023 /s/ Liren Chen
Liren Chen, Director, President and Chief Executive Officer
(Principal Executive Officer)

Date: February 15, 2023 /s/ Richard J. Brezski
Richard J. Brezski, Chief Financial Officer
(Principal Financial Officer and Principal Accounting Officer)

EXHIBIT 21

SUBSIDIARIES OF INTERDIGITAL, INC.

Subsidiary	Jurisdiction / State of Incorporation or Organization
7H World, Inc.	Delaware
Chordant Europe Ltd.	United Kingdom
Chordant France SAS	France
Chordant, Inc.	Delaware
DRNC Holdings, Inc.	Delaware
IDLR Holdings, Inc.	Delaware
InterDigital Administrative Solutions, Inc.	Pennsylvania
InterDigital Belgium, LLC	Delaware
InterDigital Canada Ltee.	Delaware
InterDigital Capital, Inc.	Delaware
InterDigital CE Holdings, Inc.	Delaware
InterDigital CE Intermediate, SAS	France
InterDigital CE Patent Holdings, SAS	France
InterDigital Charitable Foundation, Inc	Delaware
InterDigital Communications, Inc.	Delaware
InterDigital Europe, Ltd.	United Kingdom
InterDigital Finland Oy	Finland
InterDigital Germany GmbH	Germany
InterDigital Holdings, Inc.	Delaware
InterDigital Madison Patent Holdings, SAS	France
InterDigital Patent Holdings, Inc.	Delaware
InterDigital R&D France, SAS	France
InterDigital Technology Corporation	Delaware
InterDigital VC Holdings, Inc.	Delaware
InterDigital VC Holdings France, SAS	France
InterDigital Video Technologies, Inc.	Delaware
InterDigital Wireless, Inc.	Pennsylvania
IPR Licensing, Inc.	Delaware
NexStar Capital, LLC	Delaware
NexStar Partners GP, L.P.	Delaware
NexStar Partners, L.P.	Delaware
NexStar Strategic Investments, LLC	Delaware
VID SCALE, Inc.	Delaware

EXHIBIT 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (Nos. 333-218755, 333-159743, 333-66626, 33-89922, and 33-43253) of InterDigital, Inc. of our report dated February 15, 2023 relating to the financial statements, financial statement schedule and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP

Philadelphia, Pennsylvania
February 15, 2023

EXHIBIT 31.1

CERTIFICATIONS

I, Liren Chen, certify that:

1. I have reviewed this Annual Report on Form 10-K of InterDigital, 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: February 15, 2023

/s/ Liren Chen

Liren Chen
President and Chief Executive Officer

EXHIBIT 31.2

CERTIFICATIONS

I, Richard J. Brezski, certify that:

1. I have reviewed this Annual Report on Form 10-K of InterDigital, 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: February 15, 2023

/s/ Richard J. Brezski

Richard J. Brezski

Chief Financial Officer

EXHIBIT 32.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350
AS ADOPTED PURSUANT TO SECTION 906
OF THE SARBANES-OXLEY ACT OF 2002

In connection with the accompanying Annual Report on Form 10-K of InterDigital, Inc. (the "Company") for the year ended December 31, 2022, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Liren Chen, President and Chief Executive Officer of the Company, hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; 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: February 15, 2023

/s/ Liren Chen

Liren Chen
President and Chief Executive Officer

EXHIBIT 32.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350
AS ADOPTED PURSUANT TO SECTION 906
OF THE SARBANES-OXLEY ACT OF 2002

In connection with the accompanying Annual Report on Form 10-K of InterDigital, Inc. (the "Company") for the year ended December 31, 2022, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Richard J. Brezski, Chief Financial Officer of the Company, hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; 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: February 15, 2023

/s/ Richard J. Brezski

Richard J. Brezski
Chief Financial Officer