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

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (Date of Earliest Event Reported): February 15, 2022

PDF SOLUTIONS, INC.

(Exact name of registrant as specified in its charter)

000-31311

(Commission File Number)

Delaware
(State or Other Jurisdiction of Incorporation)

25-1701361
(I.R.S. Employer Identification No.)

2858 De La Cruz Boulevard
Santa Clara, CA 95050

(Address of principal executive offices, with zip code)

(408) 280-7900

(Registrant's telephone number, including area code)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, \$0.00015 par value	PDFS	The NASDAQ Stock Market LLC

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 or Rule 12b-2 of the Securities Exchange Act of 1934.

Emerging growth company

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

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Item 2.02. Results of Operations and Financial Condition.

On February 15, 2022 PDF Solutions (the “Company”) issued a press release regarding its financial results and certain other information related to the fourth quarter and year ended December 31, 2021. The Company also posted on the Investors section of its website (www.pdf.com) a management report with regard to the fourth quarter and year ended December 31, 2021. Copies of the press release and management report are attached to this report as Exhibit 99.1 and 99.2, respectively. Information on the website is not, and will not be deemed, a part of this report or incorporated into any other filings the Company makes with the Securities and Exchange Commission.

The information in this Item 2.02, including Exhibits 99.1 and 99.2, is being furnished and shall not be deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), or otherwise subject to the liabilities under that Section, and shall not be deemed incorporated by reference into any filing of the Company under the Securities Act of 1933, as amended, or the Exchange Act, except as shall be expressly set forth by specific reference in such filing.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits

<u>Exhibit No.</u>	<u>Description</u>
99.1	Press Release dated February 15, 2022, regarding financial results and certain other information related to the fourth quarter and year ended December 31, 2021.
99.2	Management Report by PDF Solutions, Inc. as of February 15, 2022.
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

SIGNATURES

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

PDF SOLUTIONS, INC. (Registrant)

By: /s/ Adnan Raza
Adnan Raza
EVP, Finance, and Chief Financial Officer (principal financial and accounting officer)

Dated: February 15, 2022



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News Release

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PDF Solutions® Reports Fourth Quarter and Full Year 2021 Results

Business Highlights

- Record total full year 2021 revenues of \$111.1 million, up 26% year over year
- Analytics revenue accounted for 84% of total 2021 full year revenues
- Bookings for full year 2021 up more than 40% compared to full year 2020 bookings
- Backlog of \$179.5 million as of December 31, 2021, up 66% compared to backlog as of December 31, 2020
- GAAP Gross Margin of 61% for the fourth quarter of 2021 and 60% for full year 2021
- Non-GAAP Gross Margin of 65% for the fourth quarter of 2021 and 64% for full year 2021
- Cash, cash equivalents, and short-term investments of \$140.2 million as of December 31, 2021
- Expect full year 2022 total revenues to grow greater than 20% on a year-over-year basis

SANTA CLARA, Calif. — Tuesday, February 15, 2022 — PDF Solutions, Inc. (Nasdaq: PDFS), a leading provider of comprehensive data solutions for the semiconductor ecosystem, today announced financial results for its fourth quarter and year ended December 31, 2021.

Highlights of Fourth Quarter and Full Year 2021 Financial Results

Total revenues for the fourth quarter of 2021 were \$29.9 million, compared to \$29.6 million for the third quarter of 2021 and \$22.4 million for the fourth quarter of 2020. Analytics revenue for the fourth quarter of 2021 was \$27.3 million, compared to \$27.2 million for the third quarter of 2021 and \$14.5 million for the fourth quarter of 2020. Integrated Yield Ramp revenue for the fourth quarter of 2021 was \$2.6 million, compared to \$2.4 million for third quarter of 2021 and \$7.9 million for the fourth quarter of 2020. Total revenues for the full year 2021 and 2020 were \$111.1 million and \$88.0 million, respectively.

GAAP gross margin for the fourth quarter of 2021 was 61%, compared to 63% for the third quarter of 2021 and 56% for the fourth quarter of 2020. GAAP gross margin for the full year 2021 and 2020 was 60% and 58%, respectively.

Non-GAAP gross margin for the fourth quarter of 2021 was 65%, compared to 66% for the third quarter of 2021 and 61% for the fourth quarter of 2020. Non-GAAP gross margin for the full year 2021 and 2020 was 64% and 63%, respectively.

On a GAAP basis, net loss for the fourth quarter of 2021 was \$7.0 million, or (\$0.19) per basic and diluted share, compared to a net loss of \$2.4 million, or (\$0.06) per basic and diluted share, for the third quarter of 2021, and net loss of \$33.4 million, or (\$0.91) per basic and diluted share, for the fourth quarter of 2020. On a GAAP basis, net loss for the full year 2021 was \$21.5 million, or (\$0.58) per basic and diluted share, compared to net loss of \$40.4 million, or (\$1.17) per basic and diluted share, for the full year 2020.

Non-GAAP net income for the fourth quarter of 2021 was \$2.8 million, or \$0.07 per diluted share, compared to a non-GAAP net income of \$2.4 million, or \$0.06 per diluted share, for the third quarter of 2021, and non-GAAP net loss of \$1.3 million, or (\$0.03) per diluted share, for the fourth quarter of 2020. Non-GAAP net income for the full year 2021 was \$3.0 million, or \$0.08 per diluted share, compared to non-GAAP net loss of \$0.8 million, or (\$0.02) per diluted share, for the full year 2020.

Cash, cash equivalents and short-term investments at December 31, 2021 were \$140.2 million, compared to \$145.3 million at December 31, 2020, a decrease of \$5.1 million. Cash provided by operating activities was \$0.4 million for the fourth quarter of 2021. Cash provided by operating activities was \$4.2 million for the full year 2021.

Conference Call

As previously announced, PDF Solutions will discuss these results on a live conference call beginning at 2:00 p.m. Pacific Time / 5:00 p.m. Eastern Time today. The call will be simultaneously webcast on PDF Solutions' website at <http://ir.pdf.com/webcasts>. A replay of the webcast will be available at the same website address beginning approximately two hours after completion of the live call. A copy of this press release, including the disclosure and reconciliation of certain non-GAAP financial measures to the comparable GAAP measures, which non-GAAP measures may be used periodically by PDF Solutions' management when discussing financial results with investors and analysts, will also be available on PDF Solutions' website at <http://www.pdf.com/press-releases> following the date of this release.

Fourth Quarter and Full Year Ended 2021 Financial Commentary Available Online

A Management Report reviewing the Company's fourth quarter and full year 2021 financial results will be furnished to the Securities and Exchange Commission on Form 8-K and published on the Company's website at <http://ir.pdf.com/financial-reports>. Analysts and investors are encouraged to review this commentary prior to participating in the conference call.

Information Regarding Use of Non-GAAP Financial Measures

In addition to providing results that are determined in accordance with Generally Accepted Accounting Principles in the United States of America (GAAP), PDF Solutions also provides certain non-GAAP financial measures. Non-GAAP gross margin excludes stock-based compensation expense and the amortization of acquired technology. Non-GAAP net income (loss) excludes the effects of certain non-recurring items, expenses related to an arbitration proceeding for a disputed contract with a customer, write-down in value of property and equipment, acquisition-related costs, stock-based compensation expense, amortization of acquired technology and other acquired intangible assets, and their related income tax effects, as applicable, as well as adjustments for the non-cash portion of income taxes, tax impact of the CARES Act and valuation allowance for deferred tax assets. These non-GAAP financial measures are used by management internally to measure the Company's profitability and performance. PDF Solutions' management believes that these non-GAAP measures provide useful supplemental information to investors regarding the Company's ongoing operations in light of the fact that none of these categories of expense has a current effect on the future uses of cash (with the exception of expenses related to an arbitration proceeding for a disputed contract with a customer and acquisition-related costs) nor do they impact the generation of current or future revenues. These non-GAAP results should not be considered an alternative to, or a substitute for, GAAP financial information, and may differ from similarly titled non-GAAP measures used by other companies. In particular, these non-GAAP financial measures are not a substitute for GAAP measures of income or loss as a measure of performance, or to cash flows from operating, investing and financing activities as a measure of liquidity. Since management uses these non-GAAP financial measures internally to measure profitability and performance, PDF Solutions has included these non-GAAP measures to give investors an opportunity to see the Company's financial results as viewed by management. A reconciliation of the comparable GAAP financial measures to the non-GAAP financial measures is provided at the end of the Company's financial statements presented below.

Forward-Looking Statements

The press release and the planned conference call include forward-looking statements regarding the Company's future expected business performance and financial results, including expectations total revenues, that are subject to future events and circumstances. Actual results could differ materially from those expressed in these forward-looking statements. Risks and uncertainties that could cause results to differ materially include risks associated with: continued adoption of the Company's solutions by new and existing customers; project milestones or delays and performance criteria achieved; cost and schedule of new product development; the impact of inflation; the provision of technology and services prior to the execution of a final contract; the continuing impact of the coronavirus (COVID-19) on the semiconductor industry and on the Company's operations or supply and demand for the Company's products; the time required of the Company's executive management for, and the expenses related to, as well as the success of the Company's strategic growth opportunities and partnerships, including its partnership with Advantest Corporation; our ability to successfully integrate the acquired businesses and technologies; whether we can successfully convert our backlog into revenue; customers' production volumes under contracts that provide Gainshare royalties; and other risks set forth in PDF Solutions' periodic public filings with the Securities and Exchange Commission, including, without limitation, its Annual Reports on Form 10-K, most recently filed for the year ended December 31, 2020, Quarterly Reports on Form 10-Q, and Current Reports on Form 8-K and amendments to such reports. The forward-looking statements made in the conference call are made as of the date hereof, and PDF Solutions does not assume any obligation to update such statements nor the reasons why actual results could differ materially from those projected in such statements. PDF Solutions has not filed its Form 10-K for the year ended December 31, 2021. As a result, all financial results described in this earnings release should be considered preliminary, and are subject to change to reflect any necessary adjustments or changes in accounting estimates, that are identified prior to the time we file our Form 10-K.

About PDF Solutions

PDF Solutions (NASDAQ: PDFS) provides comprehensive data solutions designed to empower organizations across the semiconductor ecosystem to improve the yield and quality of their products and operational efficiency for increased profitability. The Company's products and services are used by Fortune 500 companies across the semiconductor ecosystem to achieve smart manufacturing goals by connecting and controlling equipment, collecting data generated during manufacturing and test operations, and performing advanced analytics and machine learning to enable profitable, high-volume manufacturing.

Founded in 1991, PDF Solutions is headquartered in Santa Clara, California, with operations across Europe and Asia. The Company (directly or through one or more subsidiaries) is an active member of SEMI, INEMI, TPCA, IPC, the OPC Foundation, and DMDII. For the latest news and information about PDF Solutions or to find office locations, visit <http://www.pdf.com/>.

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PDF SOLUTIONS, INC.
CONDENSED CONSOLIDATED BALANCE SHEETS (UNAUDITED)
(In thousands)

	December 31,	
	2021	2020
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 27,684	\$ 30,315
Short-term investments	112,542	114,981
Accounts receivable, net	40,087	34,140
Prepaid expenses and other current assets	8,194	13,944
Total current assets	<u>188,507</u>	<u>193,380</u>
Property and equipment, net	35,295	39,242
Operating lease right-of-use assets, net	5,408	6,672
Goodwill	14,123	15,774
Intangible assets, net	21,239	24,573
Deferred tax assets, net	75	249
Other non-current assets	9,121	7,690
Total assets	<u>\$ 273,768</u>	<u>\$ 287,580</u>
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 5,554	\$ 4,399
Accrued compensation and related benefits	9,495	8,339
Accrued and other current liabilities	3,328	6,309
Operating lease liabilities – current portion	1,758	1,926
Deferred revenues – current portion	23,691	19,895
Billings in excess of recognized revenues	—	1,337
Total current liabilities	<u>43,826</u>	<u>42,205</u>
Long-term income taxes payable	2,656	2,956
Non-current operating lease liabilities	5,258	6,516
Other non-current liabilities	2,443	1,397
Total liabilities	<u>54,183</u>	<u>53,074</u>
Stockholders' equity:		
Common stock and additional paid-in-capital	423,075	407,179
Treasury stock at cost	(104,705)	(96,215)
Accumulated deficit	(97,721)	(76,233)
Accumulated other comprehensive loss	(1,064)	(225)
Total stockholders' equity	<u>219,585</u>	<u>234,506</u>
Total liabilities and stockholders' equity	<u>\$ 273,768</u>	<u>\$ 287,580</u>

PDF SOLUTIONS, INC.

CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS (UNAUDITED)

(In thousands, except per share amounts)

	Three months ended			Year ended	
	December 31, 2021	September 30, 2021	December 31, 2020	December 31, 2021	December 31, 2020
Revenues:					
Analytics (1)	\$ 27,250	\$ 27,194	\$ 14,466	\$ 93,415	\$ 57,232
Integrated yield ramp	2,636	2,361	7,901	17,645	30,814
Total revenues	29,886	29,555	22,367	111,060	88,046
Costs and Expenses:					
Costs of revenues	11,675	11,070	9,839	44,193	36,765
Research and development	11,218	10,657	9,981	43,780	34,654
Selling, general and administrative	9,167	9,609	8,625	37,649	32,677
Amortization of other acquired intangible assets	313	314	220	1,255	741
Write-down in value of property and equipment	3,183	—	—	3,183	—
Interest and other expense (income), net	(292)	(194)	738	(683)	1,269
Loss before income taxes	(5,378)	(1,901)	(7,036)	(18,317)	(18,060)
Income tax expense	1,622	506	26,413	3,171	22,303
Net loss	\$ (7,000)	\$ (2,407)	\$ (33,449)	\$ (21,488)	\$ (40,363)
Net loss per share, basic and diluted	\$ (0.19)	\$ (0.06)	\$ (0.91)	\$ (0.58)	\$ (1.17)
Weighted average common shares used to calculate net loss per share, basic and diluted	37,348	37,221	36,727	37,138	34,458

(1) Analytics revenue includes revenue from Cimetrix Incorporated, a wholly owned subsidiary acquired by the Company in December 2020.

PDF SOLUTIONS, INC.

RECONCILIATION OF GAAP GROSS MARGIN TO NON-GAAP GROSS MARGIN (UNAUDITED)

(In thousands)

	Three months ended			Year ended	
	December 31, 2021	September 30, 2021	December 31, 2020	December 31, 2021	December 31, 2020
GAAP					
Total revenues	\$ 29,886	\$ 29,555	\$ 22,367	\$ 111,060	\$ 88,046
Costs of revenues	11,675	11,070	9,839	44,193	36,765
GAAP gross profit	\$ 18,211	\$ 18,485	\$ 12,528	\$ 66,867	\$ 51,281
GAAP gross margin	61 %	63 %	56 %	60 %	58 %
Non-GAAP					
GAAP gross profit	\$ 18,211	\$ 18,485	\$ 12,528	\$ 66,867	\$ 51,281
Adjustments to reconcile GAAP to non-GAAP gross margin:					
Stock-based compensation expense	703	670	872	2,563	3,454
Amortization of acquired technology	554	454	274	2,079	705
Non-GAAP gross profit	\$ 19,468	\$ 19,609	\$ 13,674	\$ 71,509	\$ 55,440
Non-GAAP gross margin	65 %	66 %	61 %	64 %	63 %

PDF SOLUTIONS, INC.

RECONCILIATION OF GAAP NET LOSS TO NON-GAAP NET INCOME (LOSS) (UNAUDITED)

(In thousands, except per share amounts)

	Three months ended			Year ended	
	December 31, 2021	September 30, 2021	December 31, 2020	December 31, 2021	December 31, 2020
GAAP net loss	\$ (7,000)	\$ (2,407)	\$ (33,449)	\$ (21,488)	\$ (40,363)
Adjustments to reconcile GAAP net loss to non-GAAP net income (loss):					
Stock-based compensation expense	3,457	3,363	2,987	12,931	12,463
Amortization of acquired technology	554	454	274	2,079	705
Amortization of other acquired intangible assets	313	314	220	1,255	741
Expenses of arbitration (1)	757	341	268	1,951	1,098
Write-down in value of property and equipment (2)	3,183	—	179	3,183	490
Acquisition-related costs (3)	—	—	752	—	752
Tax impact of reconciling items (4)	—	—	1,931	—	—
Tax impact of the CARES Act (5)	—	—	1,099	—	(1,162)
Tax impact of valuation allowance for deferred tax assets (6)	1,539	334	24,471	3,091	24,471
Non-GAAP net income (loss)	\$ 2,803	\$ 2,399	\$ (1,268)	\$ 3,002	\$ (805)
GAAP net loss per diluted share	\$ (0.19)	\$ (0.06)	\$ (0.91)	\$ (0.58)	\$ (1.17)
Non-GAAP net income (loss) per diluted share	\$ 0.07	\$ 0.06	\$ (0.03)	\$ 0.08	\$ (0.02)
Shares used in net income (loss) per diluted share calculation	38,430	37,916	36,727	37,901	34,458

- (1) Represents expenses related to an arbitration proceeding over a disputed customer contract, which expenses are expected to continue until the arbitration is resolved.
- (2) Pertains to write-down in value of our first-generation of e-beam tools for Design-for-Inspection systems wherein carrying values may not be fully recoverable due to lack of market demand and future needs of our customers for these tools.
- (3) Represents transaction expenses related to the acquisition of Cimatrix Incorporated in the fourth quarter of 2020.
- (4) Tax impact of reconciling items for the fourth quarter of 2020 pertains to the reversal of prior quarters' tax impact due to a full valuation allowance recognized against the U.S. deferred tax assets (DTAs) on a GAAP basis in the fourth quarter of fiscal 2020. The above reconciling items do not have any tax expense or benefit on a GAAP basis for the years ended December 31, 2021 and 2020 due to the US federal net operating loss ("NOL") and full valuation allowance offsetting any tax impact (i.e., any increase or decrease in NOL or credits is offset by a corresponding valuation allowance from these items).
- (5) The Company booked discrete tax benefit recognized from the carryback of NOLs under the Coronavirus Aid, Relief, and Economic Security Act (the "CARES Act") enacted in March 2020 in the amount of \$2.3 million through the nine months ended September 30, 2020. Such tax benefit represents the refund of cash taxes in the amount of \$1.2 million and release of previously utilized tax attributes of \$1.1 million. Due to full valuation allowance placed against U.S. DTAs in the fourth quarter of 2020, there is no tax benefit from the released tax attributes. The Company does not have any NOLs on a non-GAAP basis and, therefore, it did not recognize any CARES Act benefit in calculating its non-GAAP tax expense and net income (loss).
- (6) The Company's GAAP tax expense is higher year-to-date compared to the non-GAAP tax expense, primarily due to the GAAP full U.S. federal and state valuation allowances. For example, on a GAAP basis, the Company does not receive a deferred tax benefit for foreign tax credits or R&D credits after valuation allowance. The Company's non-GAAP tax rate and resulting non-GAAP tax expense is not calculated with a full U.S. federal or state valuation allowance due to the Company's for Non-GAAP income and management's conclusion that it will be able to more likely than not to utilize its net DTAs. Each reporting period, management evaluates the need for a valuation allowance and may place a valuation allowance against its U.S. net DTA on a non-GAAP basis if it concludes it is more likely than not that it will not be able to utilize some or all of its US DTAs on a non-GAAP basis.



**Q4 2021 and Full Year 2021
Management Report
February 15, 2022**

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■ Q4 2021 and Full Year 2021 Non-GAAP Results

- Reconciliation of GAAP to Non-GAAP Net Income (Loss)
- Reconciliation of GAAP to Non-GAAP Spending by Function

■ Related Information

The following commentary is provided by management and should be referenced in conjunction with PDF Solutions' fourth quarter of 2021 financial results press release available on its Investor Relations website at <http://www.pdf.com/financial-news>. These remarks represent management's current views of the Company's financial and operational performance and are provided to give investors and analysts further insight into its performance in advance of the earnings call webcast. The Company disclaims any duty to update this information for future events.

PDF Solutions Reports Fourth Quarter 2021 Results

Q4 2021 Key Metrics

Revenue: \$29.9M

GAAP Gross Margin: 61%

Non-GAAP Gross Margin: 65%

GAAP Diluted EPS: (\$0.19)

Non-GAAP Diluted EPS: \$0.07

Operating Cash Flow: \$0.4M

Capital Expenditures: \$1.3M

FINANCIAL RESULTS SUMMARY

- Q4 2021 Total revenues of \$29.9M, up 1% over Q3 2021, and up 34% over Q4 2020.
- Q4 2021 Analytics revenue of \$27.3M, flat compared with Q3 2021, and up 88% over Q4 2020.
- Q4 2021 Integrated yield ramp revenue of \$2.6M, up 12% over Q3 2021 and down 67% over Q4 2020.

Key Financial & Operating Metrics – Quarterly

(in thousands, except share data, which is in millions, and percentages)

	Q4'21	Q3'21	Q2'21	Q1'21	Q4'20
Revenues	\$ 29,886	\$ 29,555	\$ 27,419	\$ 24,200	\$ 22,367
GAAP Gross Margin	61%	63%	61%	56%	56%
Non-GAAP Gross Margin	65%	66%	65%	61%	61%
Outstanding Debt	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Operating Cash Flow	\$ 416	\$ 4,022	\$ 8,130	(\$ 8,325)	\$ 10,908
Capital Expenditures (CAPEX)	\$ 1,340	\$ 1,592	\$ 535	\$ 586	\$ 1,603
\$ Shares Repurchased	\$ 0	\$ 0	\$ 0	\$ 4,523	\$ 0
Weighted Average Common Shares Outstanding	37.3	37.2	37.0	37.0	36.7
Effective Tax Rate Expense	(30)%	(27)%	(2)%	(14)%	(375)%

Key Financial & Operating Metrics – Yearly

(in thousands, except share data, which is in millions, and percentages)

	2021	2020	2019
Revenues	\$ 111,060	\$ 88,046	\$ 85,585
GAAP Gross Margin	60%	58%	61%
Non-GAAP Gross Margin	64%	63%	65%
Outstanding Debt	\$ 0	\$0	\$0
Operating Cash Flow	\$ 4,243	\$ 21,783	\$ 24,590
Capital Expenditures (CAPEX)	\$ 4,053	\$ 6,968	\$ 10,552
\$ Shares Repurchased	\$ 4,523	\$ 0	\$ 9,639
Weighted Average Common Shares Outstanding	37.1	34.5	32.4
Effective Tax Rate Benefit (Expense)	(17)%	(123)%	26%

Revenue by Geographic Area – Quarterly

(Dollars in thousands)

	Q4'21	Q3'21	Q2'21	Q1'21	Q4'20
North America	\$ 15,792	\$ 14,037	\$ 12,211	\$ 8,608	\$ 10,525
% of Total	53%	47%	45%	35%	47%
Europe	\$ 4,110	\$ 4,325	\$ 3,958	\$ 4,331	\$ 3,602
% of Total	14%	15%	14%	18%	16%
APAC	\$ 9,984	\$ 11,193	\$ 11,250	\$ 11,261	\$ 8,240
% of Total	38%	38%	41%	47%	37%
Total revenues	\$ 29,886	\$ 29,555	\$ 27,419	\$ 24,200	\$ 22,367

Revenue by Geographic Area – Yearly

(Dollars in thousands)

	2021	2020	2019
North America	\$ 50,648	\$ 36,935	\$ 36,387
% of Total	46%	42%	42%
Europe	\$ 16,724	\$ 14,727	\$ 13,463
% of Total	15%	17%	16%
APAC	\$ 43,688	\$ 36,384	\$ 35,735
% of Total	39%	41%	42%
Total revenues	\$ 111,060	\$ 88,046	\$ 85,585

GAAP / Non-GAAP Presentation

In addition to providing results that are determined in accordance with Generally Accepted Accounting Principles in the United States of America (GAAP), the Company also provides certain non-GAAP financial measures. Non-GAAP gross margin excludes stock-based compensation expense and the amortization of acquired technology. Non-GAAP net income (loss) excludes the effects of certain non-recurring items, expenses related to an arbitration proceeding for a disputed customer contract, acquisition-related costs, write-down in value of property and equipment, stock-based compensation expenses, amortization of acquired technology and other acquired intangible assets, and their related income tax effects, as applicable, as well as adjustments for the non-cash portion of income taxes, tax impact of the CARES Act and valuation allowance for deferred tax assets. These non-GAAP financial measures are used by management internally to measure the Company's profitability and performance. PDF Solutions' management believes that these non-GAAP measures provide useful supplemental measures to investors regarding the Company's ongoing operations in light of the fact that none of these categories of expense has a current effect on the future uses of cash (with the exception of expenses related to an arbitration proceeding for a disputed customer contract, and acquisition-related costs) nor do they impact the generation of current or future revenues. These non-GAAP results should not be considered an alternative to, or a substitute for, GAAP financial information, and may be different from similarly titled non-GAAP measures used by other companies. In particular, these non-GAAP financial measures are not a substitute for GAAP measures of income or loss as a measure of performance, or to cash flows from operating, investing and financing activities as a measure of liquidity. Management uses these non-GAAP financial measures internally to measure profitability and performance; these non-GAAP measures are presented here to give investors an opportunity to see the Company's financial results as viewed by management. A detailed reconciliation of the adjustments made to comparable GAAP measures is included herein.

Reconciliation of GAAP to Non-GAAP Net Income (Loss)

Quarterly

(in thousands, except for shares and per share amounts)

	Q4'21	Q3'21	Q2'21	Q1'21	Q4'20
GAAP net loss	(\$ 7,000)	(\$ 2,407)	(\$ 4,484)	(\$ 7,597)	(\$ 33,449)
Adjustments to reconcile GAAP net loss to non-GAAP net income (loss):					
Stock-based compensation expense	3,457	3,363	2,742	3,369	2,987
Amortization of acquired technology	554	454	536	535	274
Amortization of other acquired intangible assets	313	314	314	314	220
Expenses of arbitration (1)	757	341	558	295	268
Write-down in value of property and equipment (2)	3,183	—	—	—	179
Acquisition-related costs (3)	—	—	—	—	752
Tax impact of reconciling items (4)	—	—	—	—	1,931
Tax impact of the CARES Act (5)	—	—	—	—	1,099
Tax impact of valuation allowance for deferred tax assets (6)	1,539	334	52	1,166	24,471
Non-GAAP net income (loss)	\$ 2,803	\$ 2,399	(\$ 282)	(\$ 1,918)	(\$ 1,268)
GAAP net loss per diluted share	(\$ 0.19)	(\$ 0.06)	(\$ 0.12)	(\$ 0.21)	(\$ 0.91)
Non-GAAP net income (loss) per diluted share	\$ 0.07	\$ 0.06	(\$ 0.01)	(\$ 0.05)	(\$ 0.03)
Shares used in net income (loss) per diluted share calculation	38,430	37,916	37,004	36,974	36,727

- (1) Represents expenses related to an arbitration proceeding over a disputed customer contract, which expenses are expected to continue until the arbitration is resolved.
- (2) Pertains to write-down in value of our first-generation of e-beam tools for Design-for-Inspection systems wherein carrying values may not be fully recoverable due to lack of market demand and future needs of our customers for these tools.
- (3) Represents transaction expenses related to the acquisition of Cimatrix Incorporated in the fourth quarter of 2020.
- (4) Tax impact of reconciling items for the fourth quarter of 2020 pertains to the reversal of prior quarters' tax impact due to a full valuation allowance recognized against the U.S. deferred tax assets (DTAs) on a GAAP basis in the fourth quarter of fiscal 2020. The above reconciling items do not have any tax expense or benefit on a GAAP basis for the years ended December 31, 2021 and 2020 due to the US federal net operating loss ("NOL") and full valuation allowance offsetting any tax impact (i.e., any increase or decrease in NOL or credits is offset by a corresponding valuation allowance from these items).
- (5) The Company booked discrete tax benefit recognized from the carryback of NOLs under the Coronavirus Aid, Relief, and Economic Security Act (the "CARES Act") enacted in March 2020 in the amount of \$2.3 million through the nine months ended September 30, 2020. Such tax benefit represents the refund of cash taxes in the amount of \$1.2 million and release of previously utilized tax attributes of \$1.1 million. Due to full valuation allowance placed against U.S. DTAs in the fourth quarter of 2020, there is no tax benefit from the released tax attributes. The Company does not have any NOLs on a non-GAAP basis and, therefore, it did not recognize any CARES Act benefit in calculating its non-GAAP tax expense and net income (loss).
- (6) The Company's GAAP tax expense is higher year-to-date compared to the non-GAAP tax expense, primarily due to the GAAP full U.S. federal and state valuation allowances. For example, on a GAAP basis, the Company does not receive a deferred tax benefit for foreign tax credits or R&D credits after valuation allowance. The Company's non-GAAP tax rate and resulting non-GAAP tax expense is not calculated with a full U.S. federal or state valuation allowance due to the Company's for Non-GAAP income and management's conclusion that it will be able to more likely than not to utilize its net DTAs. Each reporting period, management evaluates the need for a valuation allowance and may place a valuation allowance against its U.S. net deferred tax assets (DTA) on a non-GAAP basis if it concludes it is more likely than not that it will not be able to utilize some or all of its US DTAs on a non-GAAP basis.

Reconciliation of GAAP Net Loss to Non-GAAP Net Income (Loss)

Yearly

(in thousands, except for shares and per share amounts)

	2021	2020	2019
GAAP net loss	(\$ 21,488)	(\$ 40,363)	(\$ 5,418)
Adjustments to reconcile GAAP net loss to non-GAAP net income (loss):			
Stock-based compensation expense	12,931	12,463	11,423
Amortization of acquired technology	2,079	705	574
Amortization of other acquired intangible assets	1,255	741	609
Expenses of arbitration (1)	1,951	1,098	—
Write-down in value of property and equipment (2)	3,183	490	—
Acquisition-related costs (3)	—	752	—
Restructuring charges and severance payment	—	—	92
Adjustment to contingent consideration related to acquisition	—	—	30
Tax impact of reconciling items (4)	—	—	(2,785)
Tax impact of the CARES Act (5)	—	(1,162)	—
Tax impact of valuation allowance for deferred tax assets (6)	3,091	24,471	—
Non-GAAP net income (loss)	\$ 3,002	(\$ 805)	\$ 4,525
GAAP net loss per diluted share	(\$ 0.58)	(\$ 1.17)	(\$ 0.17)
Non-GAAP net income (loss) per diluted share	\$ 0.08	(\$ 0.02)	\$ 0.14
Shares used in net income (loss) per diluted share calculation	\$ 37,901	\$ 34,458	\$ 33,122

- (1) Represents expenses related to an arbitration proceeding over a disputed customer contract, which expenses are expected to continue until the arbitration is resolved.
- (2) Pertains to write-down in value of our first-generation of e-beam tools for Design-for-Inspection systems wherein carrying values may not be fully recoverable due to lack of market demand and future needs of our customers for these tools.
- (3) Represents transaction expenses related to the acquisition of Cimatrix Incorporated in the fourth quarter of 2020.
- (4) Tax impact of reconciling items for the fourth quarter of 2020 pertains to the reversal of prior quarters' tax impact due to a full valuation allowance recognized against the U.S. deferred tax assets (DTAs) on a GAAP basis in the fourth quarter of fiscal 2020. The above reconciling items do not have any tax expense or benefit on a GAAP basis for the years ended December 31, 2021 and 2020 due to the US federal net operating loss ("NOL") and full valuation allowance offsetting any tax impact (i.e., any increase or decrease in NOL or credits is offset by a corresponding valuation allowance from these items).
- (5) The Company booked discrete tax benefit recognized from the carryback of NOLs under the Coronavirus Aid, Relief, and Economic Security Act (the "CARES Act") enacted in March 2020 in the amount of \$2.3 million through the nine months ended September 30, 2020. Such tax benefit represents the refund of cash taxes in the amount of \$1.2 million and release of previously utilized tax attributes of \$1.1 million. Due to full valuation allowance placed against U.S. DTAs in the fourth quarter of 2020, there is no tax benefit from the released tax attributes. The Company does not have any NOLs on a non-GAAP basis and, therefore, it did not recognize any CARES Act benefit in calculating its non-GAAP tax expense and net income (loss).
- (6) The Company's GAAP tax expense is higher year-to-date compared to the non-GAAP tax expense, primarily due to the GAAP full U.S. federal and state valuation allowances. For example, on a GAAP basis, the Company does not receive a deferred tax benefit for foreign tax credits or R&D credits after valuation allowance. The Company's non-GAAP tax rate and resulting non-GAAP tax expense is not calculated with a full U.S. federal or state valuation allowance due to the Company's for Non-GAAP income and management's conclusion that it will be able to more likely than not to utilize its net DTAs. Each reporting period, management evaluates the need for a valuation allowance and may place a valuation allowance against its U.S. net DTAs on a non-GAAP basis if it concludes it is more likely than not that it will not be able to utilize some or all of its US DTAs on a non-GAAP basis.

Reconciliation of GAAP to Non-GAAP Spending by Function

Quarterly

	<i>(in thousands)</i>				
	Q4'21	Q3'21	Q2'21	Q1'21	Q4'20
Cost of Revenue - GAAP	\$ 11,675	\$ 11,070	\$ 10,785	\$ 10,663	\$ 9,839
Adjustments to reconcile GAAP Cost of Revenue to non-GAAP Cost of Revenue:					
Stock-based compensation expense	(703)	(670)	(538)	(652)	(872)
Amortization of acquired technology	(554)	(454)	(536)	(535)	(274)
Cost of Revenue - Non-GAAP	\$ 10,418	\$ 9,946	\$ 9,711	\$ 9,476	\$ 8,693
Research & Development - GAAP	\$ 11,218	\$ 10,657	\$ 11,064	\$ 10,841	\$ 9,981
Adjustments to reconcile GAAP R&D to non-GAAP R&D:					
Stock-based compensation expense	(1,502)	(1,299)	(1,126)	(1,588)	(1,187)
Write-down in value of property and equipment	—	—	—	—	(179)
Research & Development - Non-GAAP	\$ 9,716	\$ 9,358	\$ 9,938	\$ 9,253	\$ 8,615
Selling, General, & Administrative - GAAP	\$ 9,167	\$ 9,609	\$ 9,410	\$ 9,464	\$ 8,625
Adjustment to reconcile GAAP SG&A to non-GAAP SG&A:					
Stock-based compensation expense	(1,252)	(1,394)	(1,078)	(1,129)	(928)
Expenses of arbitration (1)	(757)	(341)	(558)	(295)	(268)
Acquisition-related costs (2)	—	—	—	—	(752)
Selling, General, & Administrative - Non-GAAP	\$ 7,158	\$ 7,874	\$ 7,774	\$ 8,040	\$ 6,677

(1) Represents expenses related to an arbitration proceeding over a disputed contract with a customer, which expenses are expected to continue until the arbitration is resolved.

(2) Represents transaction expenses related to the acquisition of Cimatrix Incorporated in the fourth quarter of 2020.

Reconciliation of GAAP to Non-GAAP Spending by Function

Yearly

	(in thousands)		
	2021	2020	2019
Cost of Revenue - GAAP	\$ 44,193	\$ 36,765	\$ 33,474
Adjustments to reconcile GAAP Cost of Revenue to non-GAAP Cost of Revenue:			
Stock-based compensation expense	(2,563)	(3,454)	(3,185)
Amortization of acquired technology	(2,079)	(705)	(574)
Cost of Revenue - Non-GAAP	\$ 39,551	\$ 32,606	\$ 29,715
Research & Development - GAAP	\$ 43,780	\$ 34,654	\$ 32,747
Adjustments to reconcile GAAP R&D to non-GAAP R&D:			
Stock-based compensation expense	(5,515)	(4,800)	(4,764)
Write-down in value of property and equipment	—	(328)	—
Adjustment to contingent consideration related to acquisition	—	—	(30)
Research & Development - Non-GAAP	\$ 38,265	\$ 29,526	\$ 27,953
Selling, General, & Administrative - GAAP	\$ 37,649	\$ 32,677	\$ 26,299
Adjustment to reconcile GAAP SG&A to non-GAAP SG&A:			
Stock-based compensation expense	(4,853)	(4,209)	(3,474)
Expenses of arbitration (1)	(1,951)	(1,098)	—
Write-down in value of property and equipment	—	(162)	—
Acquisition-related costs (2)	—	(752)	—
Selling, General, & Administrative - Non-GAAP	\$ 30,845	\$ 26,456	\$ 22,825

(1) Represents expenses related to an arbitration proceeding over a disputed contract with a customer, which expenses are expected to continue until the arbitration is resolved.

(2) Represents transaction expenses related to the acquisition of Cimatrix Incorporated in the fourth quarter of 2020.