



# ASX Announcement

## CORPORATE DIRECTORY

Chairman  
PAUL KRISTENSEN

Founder, Managing Director  
DAVID BUDGE

Business Development  
and Marketing Director  
NATHAN HENRY

Non-Executive Director  
MEL ASHTON

Non-Executive Director  
and Company Secretary  
MATHEW WHYTE

## FAST FACTS

Issued Capital: 75.5m  
Quoted Options: 3.7m  
Unquoted Options: 2.5m  
Market Cap: \$35.0m  
Cash: \$2.5m  
(As at 31 December 2018)

## CONTACT DETAILS

U2/79 Bushland Ridge,  
Bibra Lake, WA  
AUSTRALIA 6163

enquiries@auroralabs3d.com  
t. +61 (0)8 9434 1934  
auroralabs3d.com

**ASX CODE: A3D**

**ACN: 601 164 505**

## Aurora Labs Limited Quarterly Report and Appendix 4C for Q2 FY2019

### Highlights:

- Rapid Manufacturing Printer (RMP1) achieves speed increase to 40kg per day or 20 times faster than Market Speed
- Aurora reveals ground-breaking Multi-level Printing, used in Rapid Manufacturing Technology printers, at international tradeshow, Formnext
- Finalisation of 50/50 Joint Venture (JV) AdditiveNow™ to provide additive manufacturing services to the oil & gas, mining and major infrastructure sectors<sup>9</sup>
- Further expansion to Aurora's Industry Partner Program by signing preliminary non-binding agreement with members of the Fortescue Metals Group of companies<sup>1</sup>

Aurora Labs Limited ("Aurora" or "the Company") (ASX:A3D), has today released its quarterly Appendix 4C for Q2 (FY) 2019 (refer attached).

### Rapid Manufacturing Technology Enhancements

This has been a significant quarter for Aurora Labs as the Company continues to progress its Rapid Manufacturing Technology (RMT). The Alpha unit of Aurora's RMT is able to achieve speed increases of 20 times Market Speed<sup>2</sup> and is now printing at 1.667kg/hr, equivalent to 40kg a day. This is an important step in validating Aurora's technology and marks another milestone in the Company's commercialisation process.

This speed increase was achieved following various testing programmes, optimisation of the printing process and print parameter development. This is in line with the Company's target of optimising both print speed and quality of the current Alpha unit. The Company is currently linking multiple 'alpha unit' cores together to form faster arrays to allow for very high-speed printing. Aurora continues to focus its efforts on significantly increasing its speed and build areas with the ultimate goal of achieving a print rate of 1,000kg/day.

### [Aurora's Multi-level Concurrent Printing \(MCP\) animation](#)

In November 2018, the Company unveiled key aspects behind Aurora's RMT at a talk to major industry groups at Formnext, a leading exhibition dedicated to additive manufacturing, held in Frankfurt, Germany. David Budge, CEO and Co-founder of Aurora labs, used animation to demonstrate Multi-level Concurrent Printing (MCP), a significant technology developed by Aurora allowing Aurora's RMT to print much faster than other current metal 3D printing technologies. MCP allows parallel, multi-layer printing, whereby Aurora's RMP machine prints multiple layers simultaneously in a single

<sup>1</sup> Preliminary non-binding agreement signed with The Pilbara Infrastructure Pty Ltd (ACN 103 096 340) and Chichester Metals Pty Ltd (ACN 109 264 262).

<sup>2</sup> Aurora Labs defines "Market Speed" as the speed at which a comparable 3D metal printer can print Titanium (CP-Ti). Market research has shown this to be approximately 81.7 g/hr or 1.96 kg per day as at the date of this announcement.

pass. By printing on multiple levels at once, Aurora's machine overcomes key speed limitations in the 3D printing process.

As a result of the MCP release, Aurora is now in detailed discussions with a number of new large potential industry partners that have expressed an interest in either working with Aurora or purchasing machines. A few of the potential partners including:

- 1 land based power generation turbine manufacturer
- 2 of the world's largest automotive manufacturers
- 2 x aerospace and aviation 1 based in Europe and one in USA
- 1 x tier 1 chemical processing company
- 2 x heavy machinery one in agriculture and one in mining equipment parts
- 2 x tier 1 oil and gas companies

You can view the speech that David Budge gave at Formnext by clicking [here](#)

Quote from David Budge:

*'The tradeshow at Formnext was an unparalleled success with the launch of our new MCP technology. In the days immediately following the launch we had meetings with an enormous number of potential industry partner groups that were extremely excited about understanding more about the technology and how it could potentially be utilised in their organisations. These companies included some of the most significant and recognisable in the world from sectors including heavy manufacturing, power generation, oil & gas, automotive and aerospace. Since the show, we've been kept extremely busy with an ongoing dialogue with many of these companies around potential engagement. This year is shaping up to be a defining year for Aurora both with the technology and the relationships we are developing and we're all looking forward to a remarkable year ahead.'*

### **Rapid Manufacturing Printer (RMP1)**

It has been a busy period for Aurora with the successful printing at speed with the core unit for the RMT. This has allowed us to accelerate the development of both the Alpha II and the first Beta RMP1 that are being completed concurrently. The Alpha II unit is essentially a modified alpha unit with two alpha cores built into it to prove out the scaling process and demonstrate the ability to print at yet higher speeds. The first RMP1 beta is a pre-production machine which will be almost identical to our final production line machines, with the exception of improvement and changes that come from feedback from customers.

*"Unfortunately we've encountered some unavoidable obstacles which have led to us falling behind on projected milestones for the end of CY18.*

*R&D is unpredictable by nature and when bespoke parts the team are relying on in order to progress are delayed at the supplier end, there's very little that can be done.*

*We've offered timelines in the past based on our best estimates around known, quantifiable factors, but it is impossible to control everything and that is what makes these projections so difficult to get exactly right.*

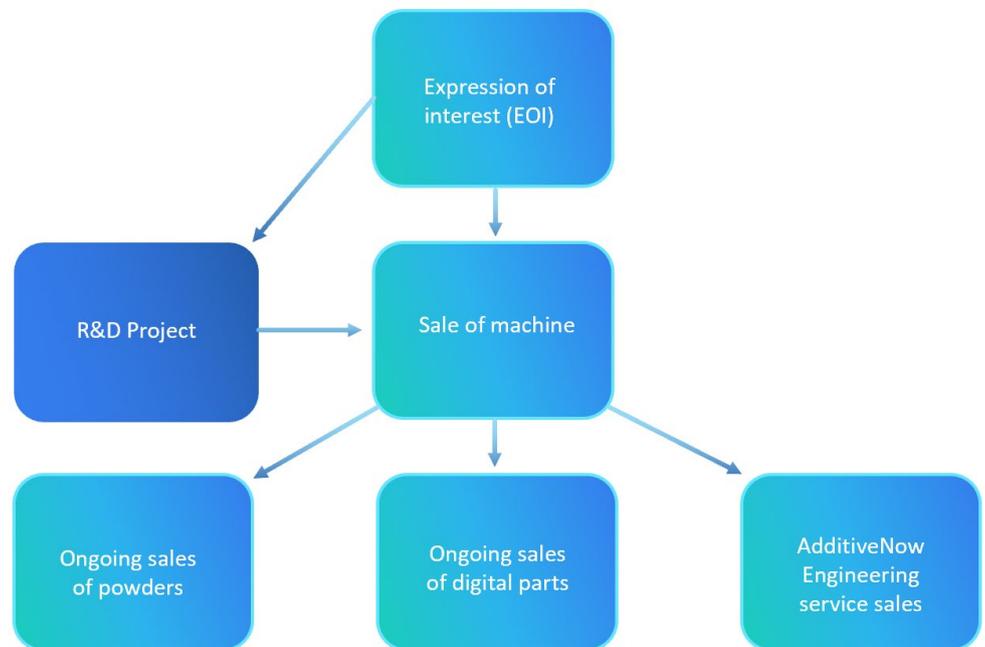
*I am confident the Aurora team are doing everything possible in the fastest timeframes to reach the next stage in our development and we are all looking forward to a very exciting year ahead...."*

David Budge, CEO

## Rapid Manufacturing Printer Target Market and Sales Cycle

Variations of the Company's sales cycle for sales of RMP1 are illustrated in the below diagram. The cycle is potentially as simple as a direct expression of interest (EOI), successful supply of a test sample and subsequent purchase of a machine, or, as complex as a joint R&D project between the Company and its customer, involving the production of various parts and samples to prove out the capabilities of the machines. Aurora estimates the average will be somewhere between these two extremes and will lead to multiple revenue stream points as indicated. All points below EOI are potential revenue streams for the company.

### Sales Process Graphic



The Company is targeting the global metal manufacturing market, expected to reach USD \$4 trillion per annum by 2020<sup>3</sup>. High speed, high-quality 3D printing can reduce both cost and lead time for replacement parts. Successful scaling of the RMT should allow printed parts to be manufactured at a price that is expected to be cost competitive with traditional metal manufacturing.

- Oil & Gas Major projects of \$147b by 2019<sup>4</sup>
- Automotive market – “The profit of the 17 most important (manufacturers) rose in 2017 to a total of around 106 billion euros (\$121 billion)”<sup>5</sup>
- Power Generation Turbines – sales of power generation gas turbines is projected to be \$112.11 billion from 2017-2026<sup>6</sup>

<sup>3</sup> Research and Markets, Global Metal Manufacturing Market Briefing 2018 – ResearchAndMarkets.com, February 21, 2018, <https://www.businesswire.com/news/home/20180221005897/en/Global-Metal-Manufacturing-Market-Briefing-2018>

<sup>4</sup> Source: Goldman Sachs, Top Projects 2018, April 9 2018

<sup>5</sup> <https://www.forbes.com/sites/neilwinton/2019/01/03/healthy-global-auto-sales-growth-looks-doomed-in-2019/#3181c40d55a6>

<sup>6</sup> <https://www.turbomachinerymag.com/electrical-generation-gas-turbines-will-see-sales-increase-but-overcapacity-looms/>

- Aviation – requiring some 37,400 new passenger and dedicated freighter aircraft at a value of US\$5.8 trillion over the next 20 years<sup>7</sup>
- Heavy Equipment – agricultural machinery (sized at about \$126 billion in 2013<sup>8</sup>), construction equipment (valued at \$138.5 billion in 2012<sup>7</sup>) and mining equipment (valued at \$71 billion in 2012<sup>8</sup>)

## AdditiveNow™.<sup>9</sup>

During the period, Aurora finalised the agreement to form the 50/50 incorporated joint venture, named AdditiveNow™.

This is a significant achievement for Aurora and a step forward for the wider additive manufacturing industry. AdditiveNow™ aims to provide a complete additive manufacturing service, primarily for oil & gas, mining and major infrastructure clients by bringing together Aurora's products and technology with an existing substantial network to most major mining and oil & gas companies in the world. The joint venture combines Aurora's RMT with engineering expertise from Advisian to design, produce and deploy complex components.

The joint venture will focus on delivering a targeted service offering including consultation, additive manufacturing engineering services and agile manufacturing – short run productions of 3D printed parts. AdditiveNow™ aims to replace aspects of the traditional supply chain with 3D metal printing technology, potentially resulting in reducing inventory holding costs, freight and manufacturing lead times.

The recently formed JV Company is expecting to begin work with its first clients in the near future. To read more about AdditiveNow™, visit the website at <https://additivenow.com/>.

## Industry Partner Program

Aurora's Industry Partner Program is an opportunity for major manufacturing and engineering companies to access Aurora's RMT and explore applications of additive manufacturing. The Company is building these programs with VEEM, DNV-GL, Advisian and Fortescue Metals Group who have recently joined the program.

## Fortescue Metals Group

At the beginning of the quarter, Aurora announced the signing of a non-binding term sheet with subsidiaries of Fortescue Metals Group ("**Fortescue**"). The agreement comprises an Industry Partner Program, which involves the opportunity for Aurora to work directly with the Fortescue companies on the Company's RMT to demonstrate the potential for its application across the Fortescue group's significant integrated mining operations in the Pilbara region of Western Australia.

Fortescue is an ASX-listed global leader in the iron-ore industry. The venture could progress to Aurora potentially developing technology or processes that may significantly reduce production and operation costs in the mining and resources sectors.

<sup>7</sup> <https://www.airbus.com/aircraft/market/global-market-forecast.html>

<sup>8</sup> [http://en.wikipedia.org/wiki/Agricultural\\_machinery\\_industry](http://en.wikipedia.org/wiki/Agricultural_machinery_industry)

<sup>9</sup> Please refer to a description of AdditiveNow at the end of this document.

The non-binding term sheet between Aurora and the Fortescue companies provides for an initial 12 month term and may be extended by mutual agreement.

### **Estimated Powder Production Unit Development**

Aurora sees a significant opportunity with powders and testing has commenced via its Powder Production Prototype Unit. The prototype is intended to demonstrate the technology for producing very high quality powders at a much lower cost than current methods with higher production capacities. This work is ongoing and our initial developments look extremely promising. We are currently in discussions with a number of the world's largest powder manufacturers around both supply of powders and potential use of our technology.

### **Progress with Aurora's S-Titanium Pro (STP)**

Aurora continues sales of the S-Titanium Pro while developing the RMT. A number of printers have been installed and commissioned in the quarter.

### **Corporate**

The Company held its Annual General Meeting (AGM) on 30 November 2018, and all resolutions were passed.

### **Financial and Cash Position**

As at 31 December 2018, cash at bank and on deposit was approximately A\$2.5 million. During the December quarter, the Company received A\$1.38 million tax incentive refund from the Australian Government which will further contribute to the development of the RMT and general working capital.

Please refer to the Appendix 4C quarterly commitments report for the period ended 31 December 2018 for further information.

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## **ABOUT AURORA LABS**

Aurora Labs Limited ("the Company"), an industrial technology and innovation company that specialises in the development of 3D metal printers, powders, digital parts and their associated intellectual property.

Aurora Labs is listed on the Australian Securities Exchange (ASX: A3D).

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## **ABOUT AdditiveNow™**

AdditiveNow is an incorporated joint venture between A3D Holdings Pty Ltd (a member of the Aurora Labs group of companies) and WorleyParsons Services Pty Ltd (a member of the WorleyParsons group of companies). It is operated through AdditiveNow Pty Ltd (ACN 630 628 134) and AdditiveNow Holdings Pty Ltd (ACN 630 609 068). This document was prepared by Aurora Labs. None of AdditiveNow Pty Ltd, AdditiveNow Holdings Pty Ltd or WorleyParsons Services Pty Ltd takes any responsibility or liability for the statements contained in this document.”

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## **FORWARD LOOKING STATEMENTS**

This announcement contains forward-looking statements which incorporate an element of uncertainty or risk, such as 'intends', 'may', 'could', 'believes', 'estimates', 'targets' or 'expects'. These statements are based on an evaluation of current economic and operating conditions, as well as assumptions regarding future events. These events are, as at the date of this announcement, expected to take place, but there cannot be any guarantee that such events will occur as anticipated or at all given that many of the events are outside Aurora's control.

Accordingly, Aurora and the directors cannot and do not give any assurance that the results, performance or achievements expressed or implied by the forward-looking statements contained in this announcement will actually occur.

For further information, please contact:

[enquiries@auroralabs3D.com](mailto:enquiries@auroralabs3D.com)

## Appendix 4C

### Quarterly report for entities subject to Listing Rule 4.7B

Introduced 31/03/00 Amended 30/09/01, 24/10/05, 17/12/10, 01/09/16

**Name of entity**

**Aurora Labs Limited (ASX: A3D)**

**ABN**

**44 601 164 505**

**Quarter ended ("current quarter")**

**31 December 2018**

<b>Consolidated statement of cash flows</b>	<b>Current quarter \$A'000</b>	<b>Year to date 6 months \$A'000</b>
<b>1. Cash flows from operating activities</b>		
1.1 Receipts from customers	87	396
1.2 Payments for		
(a) research and development <sup>1</sup> (Medium and Large Format Printer (MFP and LFP)) Powder production unit (PPU)	(542)	(1,018)
(b) product manufacturing and operating costs (Small Format Printer (SFP))	(134)	(326)
(c) advertising and marketing	(72)	(166)
(d) leased assets	-	-
(e) staff costs	(1,019)	(1,963)
(f) administration and corporate costs	(813)	(1,395)
1.3 Dividends received (see note 3)	-	-
1.4 Interest received	10	24
1.5 Interest and other costs of finance paid	-	-
1.6 Income taxes paid	-	-
1.7 R & D grants received	1,384	1,384
1.8 Other income	24	24
<b>1.9 Net cash from / (used in) operating activities</b>	<b>(1,075)</b>	<b>(3,040)</b>

<sup>1.</sup> Research and development is not inclusive of allocation for staff, administration and corporate costs.

Consolidated statement of cash flows	Current quarter \$A'000	Year to date 6 months \$A'000
<b>2. Cash flows from investing activities</b>		
2.1 Payments to acquire:		
(a) property, plant and equipment	(36)	(98)
(b) businesses (see item 10)	-	-
(c) investments	-	-
(d) intellectual property	(40)	(62)
(e) other non-current assets	-	-
2.2 Proceeds from disposal of:		
(a) property, plant and equipment	-	-
(b) businesses (see item 10)	-	-
(c) investments	-	-
(d) intellectual property	-	-
(e) other non-current assets	-	-
2.3 Cash flows from loans to other entities	-	-
2.4 Dividends received (see note 3)	-	-
2.5 Other (provide details if material)	-	-
<b>2.6 Net cash from / (used in) investing activities</b>	<b>(76)</b>	<b>(160)</b>

<b>3. Cash flows from financing activities</b>		
3.1 Proceeds from issues of shares	1,877	1,993
3.2 Proceeds from issue of convertible notes	-	-
3.3 Proceeds from exercise of share options	-	-
3.4 Transaction costs related to issues of shares, convertible notes or options	(10)	(30)
3.5 Proceeds from borrowings	-	-
3.6 Repayment of borrowings	-	-
3.7 Transaction costs related to loans and borrowings	-	-
3.8 Dividends paid	-	-
3.9 Other (provide details if material)	-	-
<b>3.10 Net cash from / (used in) financing activities</b>	<b>1,867</b>	<b>1,963</b>

<b>Consolidated statement of cash flows</b>	<b>Current quarter \$A'000</b>	<b>Year to date 6 months \$A'000</b>
<b>4. Net increase / (decrease) in cash and cash equivalents for the period</b>		
4.1 Cash and cash equivalents at beginning of quarter/year to date	1,840	3,790
4.2 Net cash from / (used in) operating activities (item 1.9 above)	(1,075)	(3,040)
4.3 Net cash from / (used in) investing activities (item 2.6 above)	(76)	(160)
4.4 Net cash from / (used in) financing activities (item 3.10 above)	1,867	1,963
4.5 Effect of movement in exchange rates on cash held	2	5
<b>4.6 Cash and cash equivalents at end of quarter</b>	<b>2,558</b>	<b>2,558</b>

<b>5. Reconciliation of cash and cash equivalents</b> at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	<b>Current quarter \$A'000</b>	<b>Previous quarter \$A'000</b>
5.1 Bank balances	2,558	840
5.2 Call deposits	-	1,000
5.3 Bank overdrafts	-	-
5.4 Other (Cash on Hand)	-	-
<b>5.5 Cash and cash equivalents at end of quarter (should equal item 4.6 above)</b>	<b>2,558</b>	<b>1,840</b>

<b>6. Payments to directors of the entity and their associates</b>	<b>Current quarter \$A'000</b>
6.1 Aggregate amount of payments to these parties included in item 1.2	210
6.2 Aggregate amount of cash flow from loans to these parties included in item 2.3	-
6.3 Include below any explanation necessary to understand the transactions included in items 6.1 and 6.2	

Item 6.1 includes salaries and directors fees paid to directors.

<b>7. Payments to related entities of the entity and their associates</b>	<b>Current quarter \$A'000</b>
7.1 Aggregate amount of payments to these parties included in item 1.2	-
7.2 Aggregate amount of cash flow from loans to these parties included in item 2.3	-
7.3 Include below any explanation necessary to understand the transactions included in items 7.1 and 7.2	

<b>8. Financing facilities available</b> <i>Add notes as necessary for an understanding of the position</i>	<b>Total facility amount at quarter end \$A'000</b>	<b>Amount drawn at quarter end \$A'000</b>
8.1 Loan facilities	Nil	Nil
8.2 Credit standby arrangements (Credit Card)	(10)	-
8.3 Other (please specify)	-	-
8.4 Include below a description of each facility above, including the lender, interest rate and whether it is secured or unsecured. If any additional facilities have been entered into or are proposed to be entered into after quarter end, include details of those facilities as well.		

<b>9. Estimated cash outflows for next quarter</b>	<b>\$A'000</b>
9.1 Research and development	(45)
9.2 Product manufacturing and operating costs	(126)
9.3 Advertising and marketing	(63)
9.4 Leased assets	-
9.5 Staff costs	(990)
9.6 Administration and corporate costs	(389)
9.7 Property, plant and equipment & Intellectual property	(64)
<b>9.9 Total estimated cash outflows</b>	<b>(1,677)</b>

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10. Acquisitions and disposals of business entities (items 2.1(b) and 2.2(b) above)	Acquisitions	Disposals
10.1 Name of entity	-	-
10.2 Place of incorporation or registration	-	-
10.3 Consideration for acquisition or disposal	-	-
10.4 Total net assets	-	-
10.5 Nature of business	-	-

### Performance Shares

The Company provides the following information in relation to Performance Shares (ASX Code: A3DAJ):

1. Number of Performance Shares at the beginning of the current quarter was 7,612,500, comprising:
  - 7,612,500 Class C Performance Shares.
2. Each Performance Share will convert into a fully paid ordinary shares (**Shares**), on a one-for-one basis, upon the satisfaction of the following milestones (**Milestones**):
  - for Class C Performance Shares – upon achievement of Aurora (or an entity controlled by Aurora) having cumulative revenue of A\$7,250,000 before 30 June 2019.
3. If the relevant Milestone for a class of Performance Share is not achieved by the required date, then each Performance Share in that class will be automatically redeemed and cancelled by Aurora for the sum of \$0.00001 within 10 business days of non-satisfaction of that Milestone.
4. The Milestone for 7,087,500 Class B Performance Shares was not satisfied by the required date (i.e. by 30 June 2018) and the Class B Performance Shares were automatically redeemed in accordance with their terms. To ensure the redemption was properly effected, Aurora obtained shareholder approval at its 2018 annual general meeting for a selective capital reduction in relation to the Class B Performance Shares.
5. No Milestones were met during the current quarter.

### Compliance statement

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

Sign here:  .....

Company Secretary

Date: 29 January 2019

Print name: Mathew Whyte

### Notes

1. The quarterly report provides a basis for informing the market how the entity's activities have been financed for the past quarter and the effect on its cash position. An entity that wishes to disclose additional information is encouraged to do so, in a note or notes included in or attached to this report.
2. If this quarterly report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, *AASB 107: Statement of Cash Flows* apply to this report. If this quarterly report has been prepared in accordance with other accounting standards agreed by

ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standard applies to this report.

3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.