# January 2019 Corporate Update Presented by David Budge CEO Aurora Labs Ltd. January 2019

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# Corporate Snap Shot

ASX:A3D

#### MARKET CAPITALISATION AND ENTERPRISE VALUE<sup>1</sup>

Total Ordinary Shares on issue	no.	75,477,196
Share price (23 Jan 19)	A\$/share	0.48
Total Quoted Options on issue <sup>2</sup>	no.	3,686,000
Listed option price (23 Jan 19)	A\$/option	0.16
Market Capitalisation	A\$m	36.2
Cash (as at 31 Dec 18)	A\$m	2.5
Enterprise Value	A\$m	33.7

#### TOP SHAREHOLDERS (23 JAN 2019)

NAME	SHARE HELD	% OF SHARES ON ISSUE
David Budge Managing Director	23,946,785	31.7%
Top 20 Shareholders	41,849,297	55.4%

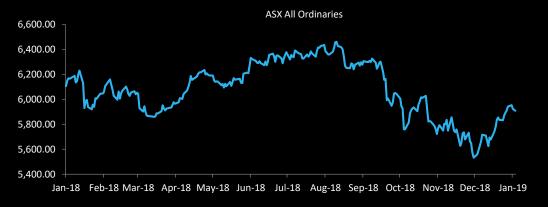
#### Notes

- 1. Excludes unquoted options and performance shares.
- 2. Listed options A3DO, Exercise Price \$1.00. Expiring 17/04/2020.

Source: As at 23 Sep 2019, Company Announcements.

#### SHARE PRICE / VOLUME HISTORY (A\$; MILLIONS)





# High complexity bracelet printed by Alpha RMT machine

# Summary

- Our vision is to challenge and displace tradition metal manufacturing with a cost effective 3D printing alternative
- Aurora designs and manufactures 3D metal printing machines, consumables and software for the world market
- Started in 2014 (ASX listed in 2016) to solve the two key problems of 3D metal printing, high machine cost and very slow print speeds.

# A Complete Printing Solution

Our complete printing solution (Printing Ecosystem) is currently under development and will potentially deliver:



#### **PRINTERS**

Fastest printers in the world



#### **POWDERS**

Low cost high quality powders



#### **PARTS STORE**

Digitally certified parts available anywhere in the world Aurora's printers are available



#### **DRM CERTIFICATION**

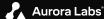
Provide control of production and certification of parts being fit for purpose



#### AdditiveNow<sup>1</sup>

World class consultancy, advisory, design, qualification printing and one-off/short run production printing.





<sup>&</sup>lt;sup>1</sup> "AdditiveNow Pty Ltd (ACN 630 628 134) is a company established as an incorporated joint venture between Aurora Labs Limited and Advisian Digital, a division of the WorleyParsons Group of Companies."

# Market



#### **GLOBAL METAL MANUFACTURING**

Our ultimate market is the global manufacturing market which is expected to reach 4 Trillion dollars by 2020<sup>1</sup>



OIL & GAS

Major projects of \$147b by 2019<sup>2</sup>



#### **AUTOMATIVE MARKET**

"The profit of the 17 most important (manufacturers) rose in 2017 to a total of around 106 billion euros (\$121 billion)"3



#### **POWER GENERATION TURBINES**

Sales of power generation gas turbines is projected to be \$112.11 billion from 2017-20264



#### **HEAVY EQUIPMENT**

Agricultural machinery (sized at about \$126 billion in 2013<sup>6</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>)



#### **GLOBAL METAL MANUFACTURING**

Requiring some 37,400 new passenger and dedicated freighter aircraft at a value of US\$5.8 trillion over the next 20 years<sup>5</sup>

<sup>1.</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%20Manufacturing-Market-Briefing-2018 2.Source: Goldman Sachs, Top Projects 2018, April 9 2018

<sup>3.</sup>https://www.forbes.com/sites/neilwinton/2019/01/03/healthy-global-auto-sales-growth-looks-doomed-in-2019/

<sup>4.</sup> https://www.turbomachinerymag.com/electrical-generation-gas-turbines-will-see-sales-increase-but-overcapacity-looms/

<sup>5.</sup>https://www.airbus.com/aircraft/market/global-market-forecast.html

<sup>6.</sup> Global Agricultural Machinery Industry, http://en.wikipedia.org/wiki/Agricultural\_machinery\_industry.

<sup>7. &</sup>quot;Construction Equipment Market Analysis by Product And Segment Forecasts to 2020," Grand View Research, September 2015, http://www.grandviewresearch.com/industry-analysis/construction-equipment-market-analysis

# 2018 Highlights

Continuing development of material parameters including printing complex parts including turbines, valves, etc.

#### **RMT**

- Printing simple parts rapidly
- A Printing at 8x market speed
- Printing at 20x market speed (40 kg per day)

#### **DNV GL**

🚣 Term Sheet

#### **VEEM**

Term Sheet

#### PPU

♣ Producing first powder

#### **FMG**

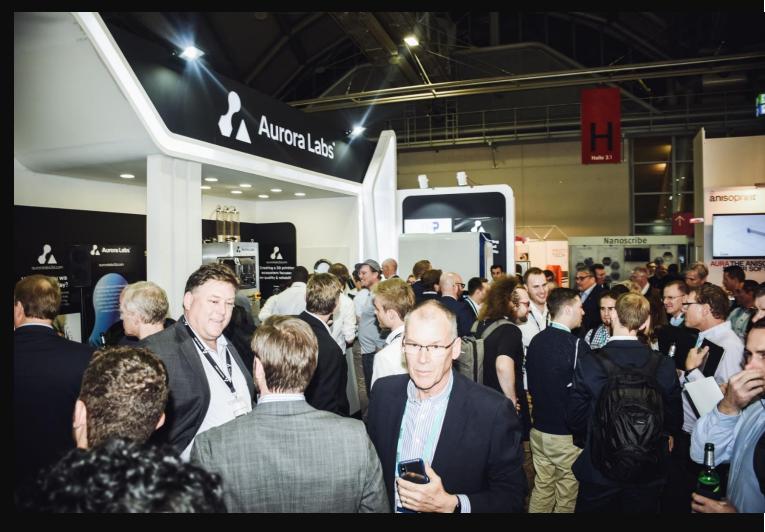
Term Sheet

#### **FORMNEXT IN GERMANY**

Unveiling core technology to global audience

#### **ADDITIVENOW**<sup>1</sup>

⚠ JV Contracts signed and work beginning soon



<sup>&</sup>lt;sup>1</sup> "AdditiveNow Pty Ltd (ACN 630 628 134) is a company established as an incorporated joint venture between Aurora Labs Limited and Advisian Digital, a division of the WorleyParsons Group of Companies."



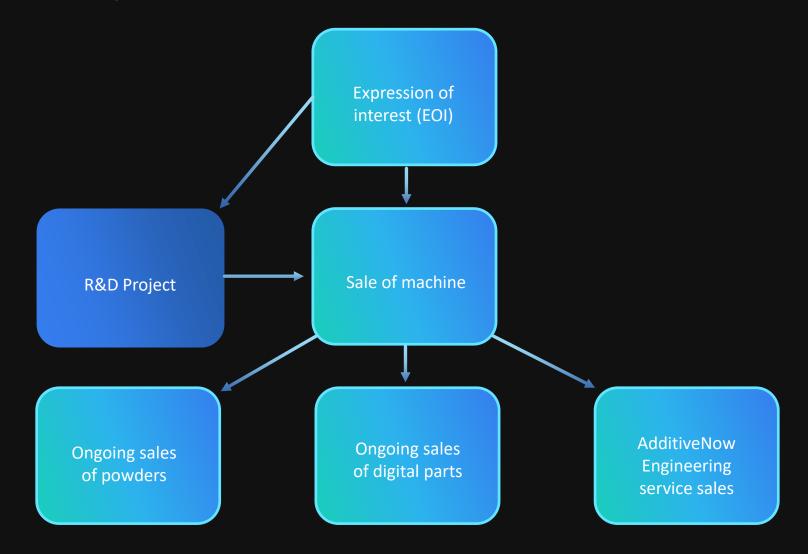
# Formnext 2018

- Formnext, held in Frankfurt, Germany, is the world's premier Additive Manufacturing event with 26,919 visitors coming from outside of Germany in 2017
- David Budge explained Multilayer Concurrent Printing (MCP) patent pending technology which enables very fast printing
- Significant interest from the Tier 1 industry leaders present
- 300+ prospects have been processed
- Industries represented include:
  - Power generation turbines
  - **A** Automotive
  - Aviation
  - Chemical processing
  - Heavy machinery
  - Industrial equipment
  - Many others



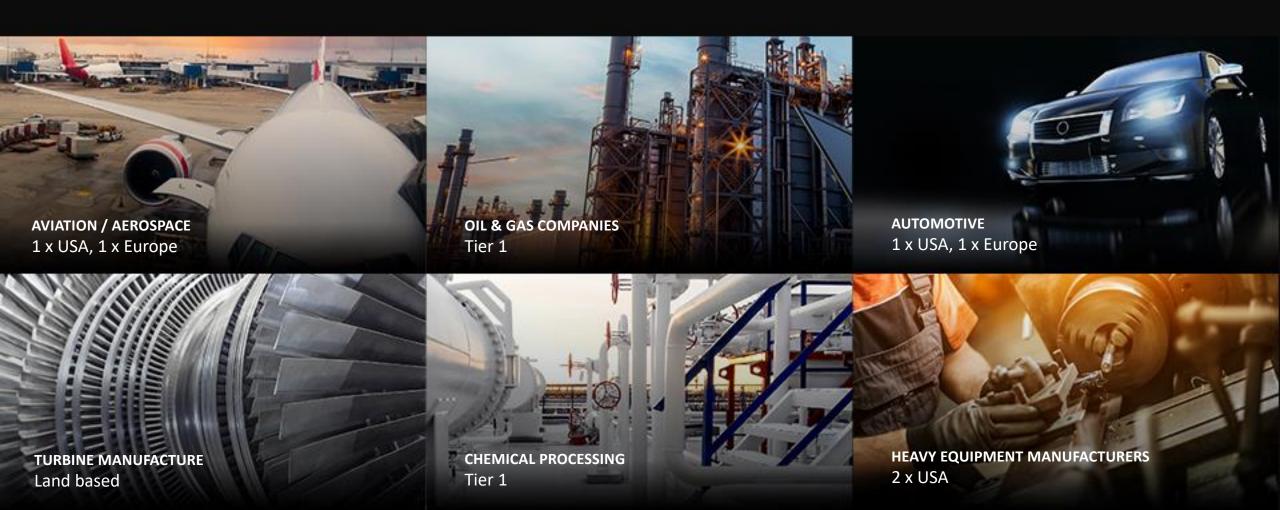


# Sales Process Graphic



# **Industry Partners**

Potential Industry Partners from Formnext



# AdditiveNow™

AdditiveNow<sup>™1</sup> uses Aurora Labs' rapid manufacturing metal 3D printing technology along with engineering expertise from Advisian Digital to design, produce and deploy complex components for energy and resources operators.



# **Industry Partners**

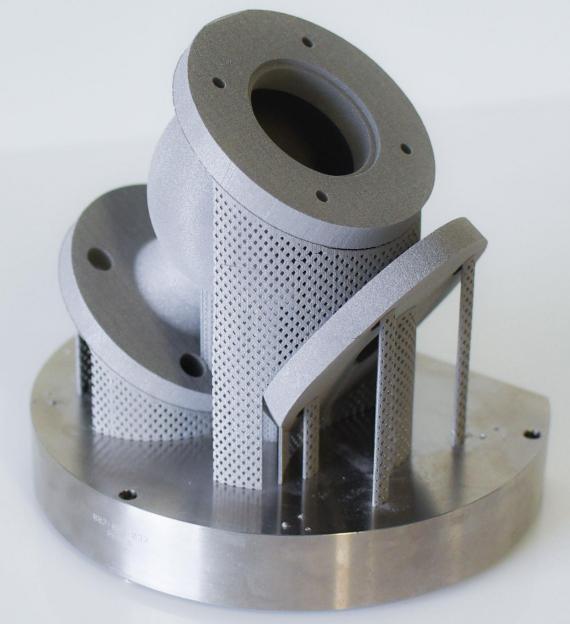








# The Technology



#### PROFESSIONAL SERIES



#### **RAPID MANUFACTURING TECHNOLOGY (RMT)**

- Commercially available in 2019
- A revolution in the high speed mass production of complex metal parts.
- Order of magnitude increase in printing speeds
- Large format version of RMT planned with2.5m x 1.5m x 1m build volume − world's largest



Turbofan exhaust mixer printed on Alpha RMT printer



All parts printed on Alpha RMT printer





### 3,5 3,0 2,5 Parts Cost (USD \$) 2,0 1,5 1,0 5 0 Low cost Additive State-of-the-art SLM Aurora Medium Traditional Manufacturing Additive Manufacturing Format RMP manufacturing Printer

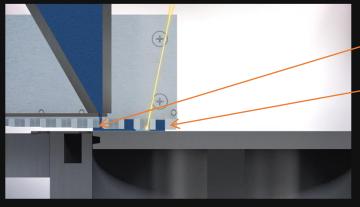
# The Cost Equation

- Order of magnitude increase in production speed
- Leads to an order of magnitude drop in cost of printed parts

1/2

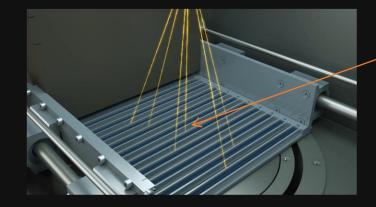
The cost of traditional manufacturing

Parts production cost

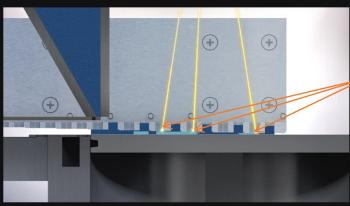


Powder drop

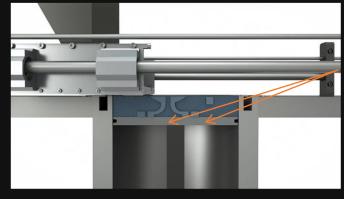
Powder level lowers as bed is coated for layer 1



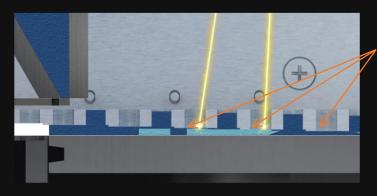
Lasing on multiple levels



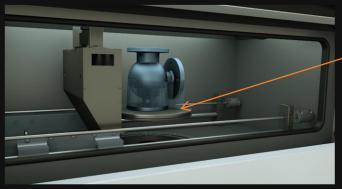
Lasing on operative surface layers 1,3 and 4



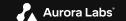
Part takes shape under powder bed



Each layer increase distance to bed plate by a set height



Completed part removed with build plate



# Opportunities in 2019

#### **ADDITIVE NOW**

JV Established and looking to receive first orders

#### **RMT PRINTERS**

Considerable interest generated at Formnext has led to ongoing evaluation of technology

#### **POWDER**

Work continues on the research and development required for this project

#### **PARTS MANUFACTURE**

For projects, agile manufacture and proof of concept

#### **CERTIFICATION AND DRM**

**D**elivery of Digitally Certified Parts through Aurora Labs virtual Store





# Thank You

