

APPENDIX 4E PRELIMINARY FINAL REPORT

Information given to ASX under listing rule 4.2A

1. Company Details

BrainChip Holdings Ltd	ABN 64 151 159 812
Current reporting period:	31 December 2018
Previous corresponding reporting period:	31 December 2017
Functional Currency:	US dollars

2. Results for announcement to the market

	2018 US\$	2017 US\$	% change
Revenue from continuing operations	947,989	269,496	252%
Loss from continuing operations after tax	(16,523,186)	(13,802,385)	20%
Gain from discontinued operations after tax	-	28,372	(100%)
Loss for the period attributable to members	(16,523,186)	(13,774,013)	20%
	US cents per share	US cents per share	
Basic and diluted loss per share	(1.64)	(1.59)	

3. Review of operations and financial results

Refer to the accompanying Preliminary Final Report including the Consolidated Statement of Profit or Loss and Other Comprehensive Income, Consolidated Statement of Financial Position, Consolidated Statement of Cash Flows, Consolidated Statement of Changes in Equity and accompanying Notes. Also refer to the accompanying Comments on Operations and Results of Operations.

4. Dividends

No dividends have been paid or are proposed to be paid by BrainChip Holdings Ltd and there is no dividend reinvestment plan in operation for the year ended 31 December 2018 (2017: Nil).

5. Net Tangible Assets per share

	US cents per share	US cents per share
Net tangible asset per share	0.68	1.57

6. Control Gained or Lost over Entities

There was no control gained or lost over entities by BrainChip Holdings Ltd or its subsidiaries ("Group") during the financial year.

7. Details of Associates and Joint Venture Entities

The Group has no interests in associates or joint venture entities.

8. Accounting Standards

The report has been prepared using Australian Accounting Standards.

9. Audit Status

The financial report for the year ended 31 December 2018 is in the process of being audited and the Group will release audited financial statements on or before 31 March 2019. It is anticipated that the financial statements will contain an unqualified audit opinion with an emphasis of matter in the independent audit report.



BrainChip Holdings Ltd

ABN 64 151 159 812

Appendix 4E

Preliminary Final Report

For the Year Ended 31 December 2018

Comments on Operations:

BrainChip Holdings Ltd (ASX: BRN), (“BrainChip” or the “Company”), and its subsidiaries (collectively the “Group”), is a leading developer of hardware accelerated solutions for advanced artificial intelligence (AI) and machine learning (ML) applications.

The Company has developed a revolutionary new spiking neural network (SNN) technology that can learn autonomously, evolve and associate information just like the human brain. The technology is proprietary, fast, completely digital and consumes very low power.

The Company is developing an integrated circuit that addresses the high-performance and high-volume requirements in AI systems at the edge (AI Edge). AI Edge is a rapidly growing market where intelligence is exploited at the point of acquiring data rather than data being transferred to a central processing core in a data centre or in the cloud for analysis and action.

BrainChip’s integrated circuit is being developed under the brand Akida™, which provides the benefit of small size, low-power and autonomous learning, as well as on-device deep learning for existing data sets of known objects or patterns in data. Development progressed significantly during 2018, with some highlights set out below. We anticipate engineering samples to be available in the second half of 2019.

During 2018, the Company achieved a number of key milestones including:

Akida Product Development

The most significant achievements of the Company in 2018 relate to the substantial advancements in the development of Akida. Major highlights are described below and resulted in a broad provisional patent filing with the US patent office. The provisional patent will lead to multiple utility patents filed in multiple jurisdictions.

In July 2018, BrainChip announced the Akida Development Environment (ADE). The development environment is a complete artificial intelligence framework for the revolutionary Akida Neuromorphic System-on-Chip (NSoC). The ADE supports the development of AI Edge products. The ADE includes the Akida execution engine, the necessary data-to-spike converters, and a “model zoo” of spiking neural network applications, as well as conversion of existing Convolutional Neural Networks (CNN) to SNN.

In September 2018, BrainChip announced the Akida architecture for the Company’s Neuromorphic System-on-Chip (NSoC). The availability of the Akida architecture to a wide array of potential customers is a significant milestone in the advancement of the Akida design because the most important part of product definition and execution is customer feedback. This feedback allows the Company to incorporate important features as it furthers the chip development.

In October 2018, BrainChip acquired a license to a cybersecurity technology that uses a native SNN, rather than a CNN to SNN conversion, from the University of Thrace in Greece. The acquisition of this license was valuable because cybersecurity represents a large potential market for the application of Akida. Importantly, the native SNN framework of the licensed technology can be implemented efficiently on Akida. This technology has the potential to demonstrate the low-power, high-accuracy nature of Akida in cybersecurity applications.

BrainChip Studio - Original Equipment Manufacturers engagements

Throughout 2018 the Company engaged with end-users in order to gain a better understanding of their needs and development process. This revealed challenges in addressing many small customers with limited resources and long internal development cycles. This understanding supports the Company’s decision to focus on an OEM sales model that provides broad reach and efficiencies in sales expenses. The Company’s success with OEM partners is highly dependent on the OEM’s success in marketing their own platform. A number of OEM engagements were announced during the year and are highlighted below.

In January 2018, BrainChip and Gaming Partners International (GPI) signed a Licensing and Development Agreement. This agreement provided for the integration of the Company’s pattern recognition technology with GPI’s Automated Table System (ATS™). GPI is a leading OEM provider of equipment to the global gaming industry.

In June 2018, BrainChip's visual analytics product was demonstrated in Macau with the GPI ATS. This was a significant event because global leaders in the gaming industry were provided private demonstrations of the system.

In March 2018, BrainChip and Quantum Corporation demonstrated the interoperability of BrainChip Studio with the StorNext File System. This OEM interoperability shows the Company's ability to search large amounts of video at a significant cost advantage over existing solutions for surveillance and media & entertainment.

In April 2018, the Company signed an agreement with Veritone to integrate BrainChip Studio as a cognitive engine within Veritone's aiWare. aiWare is a cloud-based system that provides a variety of video analytic tools for large scale online searching. This agreement was a significant advancement in the Company's strategy for BrainChip Studio because it represented the first opportunity for this product to be used in an OEM cloud-based solution.

In April 2018, the Company released BrainChip Studio AI-powered video analytic software which added auto-rotated models, Linux support and an API for easier system integration with OEM providers.

Investor and Trade Show Presentations

In addition to advancements in technology and product development, visibility to investors and customers regarding the Company's progress is critical to the Company's success. In 2018 the Company attended a number of trade shows and investor conferences to discuss the Company's progress. Several highlights from 2018 are indicated below.

In March 2018, BrainChip attended the 30th Annual ROTH Conference. The ROTH Conference is a leading, invitation only, technology conference in the United States. BrainChip's participation in this conference was an important achievement as it represented the Company's first introduction to the US technology investor market.

In March 2018, BrainChip was showcased at the London Security and Counter Terrorism Exposition where a large number of European law enforcement agencies were provided live demonstrations of BrainChip Studio. This interaction generated significant exposure for the Company and led to a number of field trials.

In September 2018, BrainChip presented at the TechKnow Invest Roadshow in Sydney and Melbourne, Australia. Presenting at this conference was important because this venue provided the Company with significant exposure to the Australian investor market.

In November 2018, BrainChip presented at the AI Edge Summit where the Company showcased the effectiveness of Akida in edge applications for vision in advanced driver assistance systems (ADAS), vision guided robotics and surveillance. These large volume applications require low-power and small size, both of which are features that Akida is uniquely positioned to provide.

Subsequent to the reporting period, the Company had the following significant activities:

- In January 2019, the Company partnered with SoftCryptum to deliver BrainChip Studio's AI-powered video analytics to government agencies in European countries.
- In February 2019, Stephe Wilks was appointed as Non-Executive Director and Chairman of the Company's Board.
- In February 2019, the Company expanded the distribution network of BrainChip Studio in Europe with the engagement of Novo Technologies in Greece and Cypress.

Earnings and Net Tangible Assets per security

The following reflects the loss used in the basic and diluted earnings and net tangible asset per share computations:

	2018	2017
	US\$	US\$
(i) Loss and net tangible assets		
Net loss for the year attributable to ordinary shareholders	(16,523,186)	(13,774,013)
Total net tangible assets	7,144,187	15,252,443
	2018	2017
	Number	Number
(ii) Number of Shares for net tangible assets		
<i>For net tangible assets per share</i>		
Number of shares	1,049,883,519	969,080,489
<i>For basic and diluted loss per share:</i>		
Weighted average number of shares ⁽¹⁾	1,006,859,664	863,653,555
Effect of the dilution of share options ⁽¹⁾	-	-
Weighted average number of ordinary shares adjusted for the effect of dilution	1,006,859,664	863,653,555
	US cents per share	US cents per share
Basic and diluted loss per share from operations	(1.64)	(1.59)
Net tangible assets per share	0.68	1.57

⁽¹⁾ Share options and performance rights are not considered dilutive.

Commentary on Results for the Period

The Consolidated Statements of Comprehensive Income, Financial Position, Cash Flow, Changes in Equity and supporting notes to the Statements are included on pages 5 to 23.

BrainChip Group's principal activity is as a developer of software and hardware accelerated solutions for advanced artificial intelligence (AI) and machine learning applications with a primary focus on the development of its BrainChip Studio and related software products, BrainChip Accelerator and AKIDA™ Neuromorphic Processor Unit hardware products.

The Group made a net loss after income tax for the year ended 31 December 2018 of \$16,523,186 (2017: \$13,774,013).

Revenues for the year ended 31 December 2018 of \$947,989 increased 252% over the \$269,496 in the same period a year ago. This increase was largely attributable to revenues recognised in the current year from the GPI agreement.

Total expenses for the year ended 31 December 2018 of \$17,601,775 increased 24% from \$14,199,739 incurred in the year ended 31 December 2017. This increase was attributable to:

- 1) Research & development (R&D) expenses of \$3,969,304 for the current period increased 80%, or \$1,763,565 from a year ago. R&D costs comprise the employee and other costs and amortisation of capitalised R&D intangible assets. R&D costs increased due to:
 - a) an increase in the number of technical staff employed for the full financial year in 2018;
 - b) the expensing of such costs related to new projects still considered research;
 - c) an increase in the amortisation expense of the capitalised intangible assets related to the completion of certain contracts; and
 - d) the write off of capitalised costs related to the Studio project in accordance with the Group's impairment policies.
- 2) Selling & marketing (S&M) expenses of \$1,465,475 for the current period increased 188%, or \$957,592 from a year ago. The increase in S&M expenses reflects the growth in personnel costs including two contracting sale personnel and related costs including such costs as trade show and customer demos, to showcase our products, and travel expenses;
- 3) General & administrative (G&A) expenses of \$4,861,194 for the current period increased 7% overall, or \$316,437 from the same period a year ago which is a result of:
 - a) increased legal and other professional consultants;
 - b) a reduction in employee costs related to the resignation of the CFO, Mr Ryan Benton in September 2018 without replacement during the year; and the resignation of the managing director of BrainChip SAS in the prior year; and
 - c) increased travel expenses related to business development and investor relations activities; and
- 4) Share based payment expense of \$7,305,802 for the current period increased 5%, or \$364,442 from the same period a year ago. Share based payments expense represents the value of options, restricted stock units and performance rights issued to directors, employees and consultants that have been earned during the reporting period, offset by the value of vesting expense related to options that have been forfeited.

At the end of the year the Group had consolidated net assets of \$8,879,309 (2017: \$18,066,470), including cash and cash equivalents of \$7,543,326 (31 December 2017: \$16,049,330).

Overall there has been an increase in the amount of cash outflows used in operating activities to \$7,203,204 (2017: \$6,074,542) as noted in the Consolidated Statement of Cash Flows, which reflects the continued focus on attaining the business milestones and strategies of the Group.

Consolidated Statement of Profit or Loss and Other Comprehensive Income

For the year ended 31 December 2018

	Note	31 December 2018 \$US	31 December 2017 \$US
Continuing operations			
Revenue from contracts with customers	2	947,989	269,496
Research & development expenses	3(a)	(3,969,304)	(2,205,739)
Selling & marketing expenses	3(b)	(1,465,475)	(507,883)
General & administrative expenses	3(c)	(4,861,194)	(4,544,757)
Share based payment expense	14(a)	(7,305,802)	(6,941,360)
Operating Loss		(16,653,786)	(13,930,243)
Finance income	4(a)	130,600	128,480
Finance expense	4(b)	-	(622)
Loss from continuing operations before income tax		(16,523,186)	(13,802,385)
Income tax expense		-	-
Loss from continuing operations after income tax		(16,523,186)	(13,802,385)
Gain from discontinued operations after tax	17	-	28,372
Net loss for the year		(16,523,186)	(13,774,013)
Other comprehensive income/(loss)			
<i>Other comprehensive income not to be reclassified to profit or loss in subsequent periods (net of tax):</i>			
Remeasurement gains/(losses) on defined benefit plans		34,094	(1,515)
<i>Items that may be reclassified subsequently to profit or loss (net of tax):</i>			
Exchange differences on translation of foreign operations		(1,030)	76,142
Other comprehensive income for the year, net of tax		33,064	74,627
Total comprehensive loss for the year, net of tax		(16,490,122)	(13,699,386)
		US cents per share	US cents per share
Loss per share from continuing operations attributable to ordinary equity holders of the Company			
Basic and diluted loss per share		(1.64)	(1.59)
Gain per share from discontinued operations attributable to ordinary equity holders of the Company			
Basic and diluted gain per share		0.00	0.00
Loss per share attributable to ordinary equity holders of the Company			
Basic and diluted loss per share	5	(1.64)	(1.59)

The above statement of profit or loss and other comprehensive income should be read in conjunction with the accompanying notes.

Consolidated Statement of Financial Position

As at 31 December 2018

	Note	31 December 2018 \$US	31 December 2017 \$US
CURRENT ASSETS			
Cash and cash equivalents	6	7,543,326	16,049,330
Trade and other receivables	7	461,129	358,975
Inventory		20,864	20,563
Other assets	8	139,789	333,600
Total current assets		8,165,108	16,762,468
NON-CURRENT ASSETS			
Plant and equipment	9	226,456	192,307
Intangible assets and goodwill	10	1,735,122	2,814,027
Other assets		38,950	41,512
Total non-current assets		2,000,528	3,047,846
TOTAL ASSETS		10,165,636	19,810,314
CURRENT LIABILITIES			
Trade and other payables	11	723,541	1,160,337
Financial liabilities	12	-	-
Other liabilities		-	-
Employee benefits liabilities		228,962	208,129
Total current liabilities		952,503	1,368,466
NON-CURRENT LIABILITIES			
Financial liabilities	12	226,873	236,342
Defined benefit plan		106,951	139,036
Total non-current liabilities		333,824	375,378
TOTAL LIABILITIES		1,286,327	1,743,844
NET ASSETS		8,879,309	18,066,470
EQUITY			
Contributed equity	13(a)	55,143,789	53,570,901
Share based payments reserve	14	16,463,527	10,733,454
Foreign currency translation reserve		80,526	81,556
Other equity reserve		247,872	247,872
Accumulated losses		(63,056,405)	(46,567,313)
TOTAL EQUITY		8,879,309	18,066,470

The above statement of financial position should be read in conjunction with the accompanying notes.

Consolidated Statement of Cash Flows

For the year ended 31 December 2018

	Note	31 December 2018 US\$	31 December 2017 US\$
CASH FLOWS USED IN OPERATING ACTIVITIES			
Receipts from customers		909,662	312,131
Payments to suppliers and employees		(8,694,093)	(6,602,048)
Interest received		97,339	23,846
Grants received from third parties		232,449	15,916
R&D credits received from third parties		251,439	170,393
Other income		-	5,220
Net cash flows used in operating activities	6	(7,203,204)	(6,074,542)
CASH FLOWS USED IN INVESTING ACTIVITIES			
Payments for property, plant and equipment		(86,738)	(125,118)
Payments for purchase of patents and licenses		(457,273)	(229,176)
Payments for capitalised research and development		(686,189)	(543,389)
Proceeds from sale of royalty interests		-	32,289
Net cash flows used in investing activities		(1,230,200)	(865,394)
CASH FLOWS FROM FINANCING ACTIVITIES			
Receipts from the issue of shares		-	20,888,073
Payment of share issue costs		(26,560)	(1,330,195)
Repayment of loans to third parties		(2,092)	(308,281)
Net cash flows (used in)/generated from financing activities		(28,652)	19,249,597
Net (decrease)/increase in cash and cash equivalents		(8,462,056)	12,309,661
Net foreign exchange differences		(43,948)	145,718
Cash at the beginning of the financial period		16,049,330	3,593,951
Cash and cash equivalents at the end of the period	6	7,543,326	16,049,330

The above cash flow statement should be read in conjunction with the accompanying notes.

Consolidated Statement of Changes in Equity For the year ended 31 December 2018

	Contributed equity	Share based payment reserve	Other reserves	Foreign currency reserve	Accumulated losses	Total equity
	US\$	US\$	US\$	US\$	US\$	US\$
At 1 January 2017	34,013,023	3,792,094	247,872	5,414	(32,791,785)	5,266,618
Loss for the year	-	-	-	-	(13,774,013)	(13,774,013)
Other comprehensive income	-	-	-	76,142	(1,515)	74,627
Total comprehensive loss for the period	-	-	-	76,142	(13,775,528)	(13,699,386)
Issue of share capital	20,888,073	-	-	-	-	20,888,073
Share issue costs	(1,330,195)	-	-	-	-	(1,330,195)
Share-based payment 14(a)	-	6,941,360	-	-	-	6,941,360
At 31 December 2017	53,570,901	10,733,454	247,872	81,556	(46,567,313)	18,066,470

	Contributed equity	Share based payment reserve	Other reserves	Foreign currency reserve	Accumulated losses	Total equity
	US\$	US\$	US\$	US\$	US\$	US\$
At 1 January 2018	53,570,901	10,733,454	247,872	81,556	(46,567,313)	18,066,470
Loss for the year	-	-	-	-	(16,523,186)	(16,523,186)
Other comprehensive income	-	-	-	(1,030)	34,094	33,064
Total comprehensive loss for the period	-	-	-	(1,030)	(16,489,092)	(16,490,122)
Issue of share capital	1,599,448	-	-	-	-	1,599,448
Share issue costs	(26,560)	-	-	-	-	(26,560)
Share-based payment 14(a)	-	5,730,073	-	-	-	5,730,073
At 31 December 2018	55,143,789	16,463,527	247,872	80,526	(63,056,405)	8,879,309

The above statement of equity should be read in conjunction with the accompanying notes.

Notes to the Appendix 4E

For the year ended 31 December 2018

1. ENTITIES CONTROLLED BY PARENT

(a) Ultimate parent

The ultimate legal Australian parent entity and the ultimate legal parent entity of the Consolidated Entity is BrainChip Holdings Ltd.

(b) Subsidiaries

The consolidated financial statements include the financial statements of BrainChip Holdings and the subsidiaries listed in the following table:

Name	Country of incorporation	Beneficial interest	
		2018	2017
Subsidiary companies of BrainChip Holdings Ltd			
BrainChip Inc. ⁽¹⁾	USA	100%	100%
Subsidiary companies of BrainChip Inc.			
BrainChip SAS (formerly Spikenet Technology SAS) ⁽²⁾	France	100%	100%

⁽¹⁾ BrainChip Holdings Ltd holds 100% of the shares of BrainChip Inc. effective from 10 September 2015.

⁽²⁾ BrainChip SAS was acquired by BrainChip Holdings Ltd on 1 September 2016. Effective 29 December 2017, the Group was re-organised such that BrainChip SAS became a wholly-owned subsidiary of BrainChip Inc.

(c) Other entities

The consolidated financial statements include the following entities controlled by BrainChip Holdings Ltd:

Name	Country of registration	Beneficial interest	
		2018	2017
BrainChip Long Term Incentive Plan Trust ⁽¹⁾	Australia	-	-

⁽¹⁾ BrainChip Holdings Ltd executed the BrainChip Long Term Incentive Plan Trust on 2 August 2018 and appointed Solium Nominees (Australia) Pty Ltd as the Plan Trustee.

2. REVENUE FROM CONTRACTS WITH CUSTOMERS

(a) Types of goods or service	2018	2017
	US\$	US\$
Product revenue	108,140	10,131
License revenue ⁽¹⁾	327,349	73,709
Development service revenue ⁽¹⁾⁽²⁾	512,500	185,656
Total revenue from contracts with customers	<u>947,989</u>	<u>269,496</u>

⁽¹⁾ \$200,000 of license revenue and \$300,000 of development service revenue has been recognised from one customer in 2018 which was deemed to have satisfied the requirements of Milestone 4 – refer Note to 13 (e)(4).

⁽²⁾ Development service revenue includes (i) further development of existing licensed technology; and/or (ii) engineering services for existing licensed technology.

(b) Timing of revenue recognition

Services transferred over time	512,500	185,656
Sale of product and license transferred at a point in time	435,489	83,840
Total revenue from contracts with customers	<u>947,989</u>	<u>269,496</u>

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For the year ended 31 December 2018

3. EXPENSES ⁽¹⁾

	2018 US\$	2017 US\$
(a) Research & development expenses		
Employee expenses	1,990,710	1,387,511
Grants received/receivable	(332,283)	(326,137)
Amortisation of intangible assets	1,098,396	1,108,423
Write off of intangible assets	813,228	-
Other expenses	399,253	35,942
Total research & development expenses	<u>3,969,304</u>	<u>2,205,739</u>
(b) Selling & marketing expenses:		
Employee expenses	785,715	422,039
Contractor fees	309,364	-
Other expenses	370,396	85,844
Total selling & marketing expenses	<u>1,465,475</u>	<u>507,883</u>
(c) General & administrative expenses:		
Director fees and key management personnel employee expenses	1,707,500	1,822,682
Employee expenses	364,182	359,589
Legal and professional fees	1,843,813	1,380,086
Travel and accommodation expenses	293,260	299,809
Depreciation of plant & equipment	51,610	75,792
Office rent	237,577	218,136
Other	363,252	388,663
Total general & administrative expenses	<u>4,861,194</u>	<u>4,544,757</u>

⁽¹⁾ Certain comparative expenditures have been reclassified to align with the current period reporting presentation. Significant adjustments comprise amortization of intangible assets being included in Research & development expenses, and the segregation of Selling & marketing expenses from General & administrative expenses.

4. FINANCE INCOME AND EXPENSES

	2018 US\$	2017 US\$
(a) Finance income		
Interest received	107,448	29,784
Foreign exchange gain	23,152	98,696
Total finance income	<u>130,600</u>	<u>128,480</u>
(b) Finance expense		
Interest expense	-	622
Total finance expense	<u>-</u>	<u>622</u>

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For the year ended 31 December 2018

5. LOSS PER SHARE

	2018 US\$	2017 US\$
Net loss attributable to ordinary equity holders for basic and diluted earnings per share	(16,523,186)	(13,774,013)
	US cents per share	US cents per share
Basic and diluted loss per share	(1.64)	(1.59)
	Number	Number
Weighted average number of ordinary shares for basic loss per share ⁽³⁾	1,006,859,664	863,653,555
Effect of the dilution of share options and performance rights ^{(1) (2)}	-	-
Weighted average number of ordinary shares adjusted for the effect of dilution	<u>1,006,859,664</u>	<u>863,653,555</u>

⁽¹⁾ At 31 December 2018, the Company had on issue 162,950,000 (2017: 190,550,000) share options that are excluded from the calculation of diluted loss per share for the current period. The options are either contingent issuable ordinary shares or considered anti-dilutive as their inclusion reduced the loss per share however these options may be dilutive in the future.

⁽²⁾ At 31 December 2018, the Company had on issue 8,500,000 (2017: 56,500,000) performance rights and 3,850,000 (2017: Nil) restricted stock units that are excluded from the calculation of diluted loss per share for the current period. The performance rights are contingently issuable at the balance sheet date and have therefore been excluded from diluted earnings per share.

⁽³⁾ Weighted average number of ordinary shares has been adjusted for all periods to 31 December 2017 by a factor of approximately 1.02 as a result of a rights issue to institutional and sophisticated investors in November 2017.

6. CASH AND CASH EQUIVALENTS

	2018 US\$	2017 US\$
Cash at bank and in hand	5,505,494	16,049,330
Term deposits	2,037,832	-
Total	<u>7,543,326</u>	<u>16,049,330</u>

Reconciliation of the net loss after tax to net cash out flows from operations

Loss after tax	(16,523,186)	(13,774,013)
Non-cash adjustment to reconcile loss before tax to net cash flows:		
Depreciation	51,610	75,792
Amortisation	1,098,396	1,108,423
Write off of intangible assets	813,228	-
Share based payments	7,305,802	6,941,360
Other income classified as investing	-	(32,289)
Foreign exchange (gain)/loss	(10,991)	(98,696)
Working capital adjustments:		
Decrease in trade and other receivables	126,581	121,645
Increase in inventory	(301)	(19,128)
(Increase)/decrease in prepayments	(34,924)	6,898
Decrease/(increase) in other assets	2,561	(135,952)
Decrease in financial liabilities	(9,469)	(287,507)
(Decrease)/Increase in defined benefits plan	(32,084)	29,398
Increase in employee provisions	20,832	105,360
Decrease in trade and other payables	(11,259)	(115,833)
Net cash used in operating activities	<u>(7,203,204)</u>	<u>(6,074,542)</u>

Notes to the Appendix 4E

For the year ended 31 December 2018

7. TRADE AND OTHER RECEIVABLES

	2018 US\$	2017 US\$
<i>Current</i>		
Trade receivables	114,795	81,138
Research tax credit ⁽¹⁾	336,582	269,537
Other receivables	9,752	8,300
	<u>461,129</u>	<u>358,975</u>

⁽¹⁾ BrainChip SAS recognised research credits from the French regulatory authorities as receivable according to the French tax regulations.

8. OTHER ASSETS

<i>Current</i>		
Grants receivable from third parties ⁽¹⁾	-	236,081
Prepayments	126,504	91,580
Interest receivable	13,285	5,939
	<u>139,789</u>	<u>333,600</u>

⁽¹⁾ Other current assets are grants to be received from various French government agencies.

9. PLANT & EQUIPMENT

Plant and equipment

Plant and equipment – Gross carrying value at cost	385,299	301,846
Accumulated depreciation	<u>(158,843)</u>	<u>(109,539)</u>
Net carrying amount	<u>226,456</u>	<u>192,307</u>

Movement in plant and equipment

At 1 January net of accumulated depreciation	192,307	140,209
Additions	86,738	125,119
Depreciation charge for the year	(51,610)	(75,792)
Net foreign exchange movements	(979)	2,771
At 31 December net of accumulated depreciation	<u>226,456</u>	<u>192,307</u>

Notes to the Appendix 4E

For the year ended 31 December 2018

10. INTANGIBLE ASSETS AND GOODWILL

	2018 US\$	2017 US\$
Patents and licenses (a)	829,664	773,437
Capitalised research & development costs (b)	-	1,135,132
Goodwill	905,458	905,458
	<u>1,735,122</u>	<u>2,814,027</u>
(a) Patents and licenses with finite useful life – at cost	970,212	841,869
Accumulated amortisation	(140,548)	(68,432)
	<u>829,664</u>	<u>773,437</u>
Movement in patents		
At 1 January	773,437	34,931
Additions	130,556	795,747
Amortisation	(73,397)	(60,538)
Net foreign exchange movements	(932)	3,297
At 31 December	<u>829,664</u>	<u>773,437</u>
(b) Capitalised research & development costs	-	2,738,355
Accumulated amortisation	-	(1,603,223)
	<u>-</u>	<u>1,135,132</u>
Movement in capitalised research & development costs		
At 1 January	1,135,132	1,491,930
Additions	686,189	543,389
Amortisation	(1,024,999)	(1,047,885)
Write off	(813,228)	-
Net foreign exchange movements	16,906	147,698
At 31 December	<u>-</u>	<u>1,135,132</u>

The uncertainty of revenue has resulted in the write off of carry forward capitalised research & development costs related to BrainChip Studio at 31 December 2018. All other projects were fully amortised by the end of the year in line with the Group's amortisation policy.

As at 31 December 2018, the Group performed an impairment assessment based on the fair value less cost of disposal (Level 2 in the fair value hierarchy) to confirm the recoverability of the Group's net assets. Based on the Group's assessment as at 31 December 2018, the market capitalisation of the Group was above the book value of its equity, which shows that the estimated recoverable amount was sufficient to recover the consolidated net assets at 31 December 2018. Assumptions used within the Group's fair value less cost of disposal determination included the Group's share price of A\$0.105 at 31 December 2018 and the foreign exchange rate of \$0.70 AUD/USD at 31 December 2018.

As at 31 December 2018, the Group considered indicators of impairment of these assets and determined that there was none other than those noted above.

11. TRADE AND OTHER PAYABLES

	2018 US\$	2017 US\$
<i>Current</i>		
Trade creditors and accruals	676,479	1,119,627
VAT and other taxes payable to foreign authorities	47,062	40,710
	<u>723,541</u>	<u>1,160,337</u>

Notes to the Appendix 4E

For the year ended 31 December 2018

12. FINANCIAL LIABILITIES

	2018 US\$	2017 US\$
<i>Current</i>		
Advances from third parties (a)	-	-
	-	-
<i>Non-Current</i>		
Advances from third parties (b)	226,873	236,342
	226,873	236,342
(a) Reconciliation of financial liabilities – current		
Opening balance	-	220,562
Repayment of advance from third parties	-	(239,016)
Interest charged on advances	-	2,779
Foreign exchange movements	-	15,675
	-	-
(b) Reconciliation of financial liabilities – non-current ⁽ⁱ⁾		
Opening balance	236,342	277,232
Repayment of advances from third parties	(2,092)	(72,600)
Fair value remeasurement	3,292	1,284
Foreign exchange movements	(10,669)	30,426
	226,873	236,342

(i) Non-current advances include loans from various French government agencies which are granted without any interest and are to be repaid under certain conditions. The benefit of the government loan at a below-market rate of interest is treated as a government grant.

Notes to the Appendix 4E

For the year ended 31 December 2018

13. CONTRIBUTED EQUITY

	2018 US\$	2017 US\$
(a) Ordinary Shares		
Issued and fully paid	55,143,789	53,570,901

(b) Movements in ordinary shares on issue

	Number	US\$
At 1 January 2017	808,200,426	34,013,023
Issue of shares pursuant to private placement ⁽¹⁾	40,000,000	4,597,620
Conversion of Performance Rights	1,000,000	-
Issue of shares pursuant to private placement ⁽²⁾	119,380,063	16,290,453
Conversion of Performance Rights	500,000	-
Share issue costs incurred	-	(1,330,195)
At 31 December 2017	969,080,489	53,570,901
At 1 January 2018	969,080,489	53,570,901
Issue of shares as remuneration to Mr Louis DiNardo ⁽³⁾	15,000,000	1,563,870
Issue of shares to the Trustee of the BrainChip LTIP – refer Note 13(c)	10,000,000	-
Conversion of Performance Rights – refer Note 13(e)(4)	49,500,000	-
Conversion of Performance Rights – refer Note 13(e)(3)	6,000,000	-
Issue of shares to third party for services performed ⁽⁴⁾	303,030	35,578
Share issue costs incurred	-	(26,560)
At 31 December 2018	1,049,883,519	55,143,789

⁽¹⁾ On 5 June 2017, 40,000,000 shares were issued at an issue price of A\$0.15 per share pursuant to a private placement to institutional and sophisticated investors raising A\$6,000,000.

⁽²⁾ On 7 November 2017, 119,380,063 shares were issued at an issue price of A\$0.18 per share pursuant to a private placement to institutional and sophisticated investors raising A\$21,488,411.

⁽³⁾ On 8 June 2018, 15,000,000 shares were issued to Mr Louis DiNardo. The shares were fair valued based on the share price of A\$0.14 (US\$0.104) on 10 May 2018, being the date of approval by shareholders at the AGM. The value of the shares issued are reported as a share based payment expense.

⁽⁴⁾ On 21 December 2018, 303,030 shares were issued to a third party for the performance of services for the 12 month period commencing 18 August 2018.

	2018 Number	2017 Number
(c) Treasury shares		
Issued and fully paid	1,500,000	-

Movements in Treasury shares

	2018 Number	2017 Number
At 1 January	-	-
Shares issued to Trust from BrainChip Holdings Ltd ⁽¹⁾	10,000,000	-
Shares Issued on conversion of Performance Rights - refer Note 13(e)(2)	(1,000,000)	-
Shares Issued on conversion of Performance Rights - refer Note 13(e)(5)	(7,500,000)	-
At 31 December	1,500,000	-

⁽¹⁾ The BrainChip Long Term Incentive Plan Trust was established on 2 August 2018 and Solium Nominees (Australia) Pty Limited was appointed the Plan Trustee. On 9 October 2018, 10,000,000 shares were issued to the Trust at no value in the name of the Trustee to be held for the conversion of vested options, performance rights and restricted stock units of the LTIP.

Notes to the Appendix 4E

For the year ended 31 December 2018

13. CONTRIBUTED EQUITY (Continued)

(d) Terms and conditions of contributed equity

Holders of ordinary shares are entitled to receive dividends as declared from time to time and are entitled to one vote per share at shareholder meetings. In the event of winding up the Company the holders are entitled to participate in the proceeds from the sale of all surplus assets in proportion to the number of and amounts paid up on shares held.

(e) Performance Rights movements

	Opening balance 1 January 2018	Converted	Allocated	Closing balance 31 December 2018
Class B Performance Rights ⁽¹⁾⁽²⁾	1,000,000	(1,000,000)	1,000,000	1,000,000
Class C Performance Rights ⁽¹⁾⁽³⁾	6,000,000	(6,000,000)	-	-
Class D Performance Rights ⁽¹⁾⁽⁴⁾	49,500,000	(49,500,000)	-	-
Class E Performance Rights ⁽⁵⁾	-	(7,500,000)	15,000,000	7,500,000
	<u>56,500,000</u>	<u>(64,000,000)</u>	<u>16,000,000</u>	<u>8,500,000</u>

⁽¹⁾ 198,000,000 performance rights were approved by shareholders on 30 July 2015 to be allocated to the shareholders of BrainChip Inc. as part consideration for the Acquisition of BrainChip Holdings. Of this amount 186,000,000 Performance Rights were issued on 10 September 2015 to BrainChip Inc. shareholders.

The remaining 12,000,000 performance rights were set aside to be issued at the Board's discretion and were issued to employees by 30 June 2018.

⁽²⁾ 1,000,000 Class B Performance Rights were converted to shares in BrainChip Holdings held by the Trustee of the BrainChip LTIP Trust on 15 October 2018, the milestones of which had been previously attained.

⁽³⁾ 6,000,000 Class B Performance Rights were converted to shares in BrainChip Holdings on 18 October 2018, the milestones of which had been previously attained.

⁽⁴⁾ 49,500,000 Class D Performance Rights were converted to shares in BrainChip Holdings on 9 October 2018, after approval by the Board that Milestone 4 had been achieved. Of the total converted, 46,500,000 had been held by shareholders and 3,000,000 had been issued to employees from the unallocated pool held at 31 December 2015.

⁽⁵⁾ The Board approved the issue of 15,000,000 Performance Rights to Mr Louis DiNardo on 11 June 2018 after approval was provided by shareholders at the AGM on 10 May 2018. 7,500,000 Performance Rights were converted to shares held by the Trustee of the BrainChip LTIP Trust on 11 December 2018 after achievement of the vesting condition.

The performance rights have the following milestones attached to them:

- Class B Performance Rights: upon announcing on the ASX that BrainChip has implemented the race car demonstration in hardware to visually illustrate the capability and scalability of BrainChip's SNAP technology to prospective licensees (Milestone 2) (as announced to ASX on 30 October 2015);
- Class C Performance Rights: upon announcing on the ASX that BrainChip has released a software API specification and RTL design solution for implementing customer Client/Server neural network applications using BrainChip hardware technology (Milestone 3) (as announced to ASX on 15 March 2016); and
- Class D Performance Rights: upon announcing on the ASX that BrainChip has executed an unconditional binding licensing agreement that has an upfront payment of no less than A\$500,000 (Milestone 4), as announced to ASX on 9 October 2018.
- Class E Performance Rights: 7,500,000 performance rights vested on 11 December 2018 and 7,500,000 will vest on 11 June 2019 subject to continued service being provided.

Notes to the Appendix 4E

For the year ended 31 December 2018

13. CONTRIBUTED EQUITY (continued)

(f) Options on issue

Unissued ordinary shares of the Company under option at 31 December 2018 are as follows:

Type	Expiry Date	Exercise Price (US\$)	Number of options
<i>Options issued as part consideration as part of the Acquisition</i>			
Unlisted ⁽¹⁾	10/09/2019	0.112	6,250,000
<i>Options issued to shareholders</i>			
Unlisted ⁽²⁾	31/05/2020	0.171	20,000,000
<i>Options issued as share based payments</i>			
Unlisted – refer Note 14(c)	Various	Various	136,700,000
Total			162,950,000

The above options are exercisable at any time on or before the expiry date.

(1) 6,250,000 unlisted options exercisable at A\$0.157 cents per share before 10 September 2019 were issued to a BrainChip Inc. shareholder as part of the consideration for the Acquisition of BrainChip Holdings on 10 September 2015.

(2) 20,000,000 options were issued as free attaching options to shares issued to sophisticated investors under a Placement on 5 June 2017.

Notes to the Appendix 4E

For the year ended 31 December 2018

14. SHARE-BASED PAYMENTS	2018 US\$	2017 US\$
(a) Recognised share-based payment expenses		
Performance Rights issued to employees	1,438,285	559,516
Options issued to directors, employees and contractors	4,190,478	6,381,844
Restricted stock units issued to employees	101,310	-
Recognised in share-based payment reserve	<u>5,730,073</u>	<u>6,941,360</u>
Shares issued to director and consultants	1,575,729	-
Total share-based payment expense	<u>7,305,802</u>	<u>6,941,360</u>

The 2018 Long Term Incentive Plan (LTIP) was adopted by shareholders in May 2018. The Company has Performance Rights and Options that were issued under the plans current at the time of offer (Performance Rights Plan, Long Term Incentive Plan and Directors and Officers Option Plan) however all new awards post May 2018 have been issued under the 2018 LTIP.

Long Term Incentive Plan

The objective of the LTIP is to attract and retain key employees and consultants. It is considered that the LTIP, through the issue of options, will provide selected employees and consultants with opportunity to participate in the future growth of the Company. Options offered under the LTIP must be offered at no more than a nominal value and under terms to be determined by the Board from time to time. It is not the intention of the Company to apply for quotation of any of the options which are issued under the LTIP.

Performance Rights Plan

Awards under the PRP were previously made in order to retain key Directors, employees (including officers) and contractors and to provide selected participants with the opportunity to participate in the growth of the Company. Rights were granted under the PRP for no consideration. Each right, upon vesting, entitles the holder to one fully paid ordinary share in the capital of the Company if certain time and/or performance measures are met in the measurement period. The Rights issued to date that remain unvested are subject to a combination of conditions including time-based conditions which prescribe a period of time that the employee must stay employed by the Company prior to automatic vesting and specific operational based milestones.

The application of conditions on issue and vesting are at the absolute discretion of the Board with the terms of any grants to Directors approved by Shareholders. If at any time prior to the Vesting Date a participant ceases to be eligible through resignation or termination, the Rights automatically lapse and are forfeited, subject to the discretion of the Board.

Directors and Officers Option Plan

The DOOP was established to enable eligible Directors and officers (including executive and non-executive directors) of the Company or its subsidiaries to receive options to acquire shares in the Company. 11,000,000 options issued under the DOOP in December 2015 lapsed during 2018.

Notes to the Appendix 4E

For the year ended 31 December 2018

14. SHARE-BASED PAYMENTS (continued)

(b) Performance Rights issued to employees

The following table summarises the movement in Performance Rights issued to employees:

	Opening balance 1 January 2018	Issued during the year ⁽¹⁾	Converted during the year	Closing balance 31 December 2018
Class B Performance Rights	1,000,000	1,000,000	(1,000,000)	1,000,000
Class D Performance Rights	3,000,000	-	(3,000,000)	-
Class E Performance Rights	-	15,000,000	(7,500,000)	7,500,000
	<u>4,000,000</u>	<u>16,000,000</u>	<u>(11,500,000)</u>	<u>8,500,000</u>

⁽¹⁾ Refer Note 13(e)

(c) Summary of options granted under the Long Term Incentive Plan and Directors & Officers Option Plan

Unissued ordinary shares of the Company under option at 31 December 2018 are as follows:

Type	Grant Date	Expiry Date	Exercise Price (US\$)	Number of options	Vested at year end
Unlisted ⁽¹⁾	4/12/2015	21/12/2020	0.172	5,300,000	3,975,000
Unlisted ⁽¹⁾	22/01/2016	01/02/2021	0.165	1,500,000	750,000
Unlisted ⁽²⁾	28/09/2016	30/09/2021	0.172	50,000,000	19,000,000
Unlisted ⁽¹⁾	8/07/2016	10/10/2021	0.113	4,000,000	2,000,000
Unlisted ⁽¹⁾	7/10/2016	10/10/2021	0.205	2,000,000	1,000,000
Unlisted ⁽³⁾	01/11/2016	01/11/2019	0.137	7,000,000	7,000,000
Unlisted ⁽¹⁾	27/01/2017	16/02/2022	0.242	100,000	25,000
Unlisted ⁽⁴⁾	30/01/2017	16/02/2022	0.241	3,000,000	3,000,000
Unlisted ⁽⁴⁾	30/01/2017	31/12/2022	0.241	3,000,000	3,000,000
Unlisted ⁽⁵⁾	05/03/2017	31/03/2022	0.209	8,000,000	2,000,000
Unlisted ⁽⁵⁾	05/03/2017	31/03/2022	0.209	6,000,000	1,500,000
Unlisted ⁽⁵⁾	05/03/2017	31/03/2022	0.209	6,000,000	1,500,000
Unlisted ⁽⁶⁾	31/05/2017	31/01/2023	0.138	2,000,000	2,000,000
Unlisted ⁽⁶⁾	31/05/2017	31/01/2024	0.138	2,000,000	-
Unlisted ⁽⁶⁾	31/05/2017	31/01/2025	0.138	2,000,000	-
Unlisted ⁽⁶⁾	31/05/2017	31/01/2026	0.138	2,000,000	-
Unlisted ⁽⁷⁾	31/05/2017	01/02/2023	0.182	1,750,000	1,750,000
Unlisted ⁽⁷⁾	31/05/2017	01/02/2024	0.182	1,750,000	-
Unlisted ⁽⁷⁾	31/05/2017	01/02/2025	0.182	1,750,000	-
Unlisted ⁽⁷⁾	31/05/2017	01/02/2026	0.182	1,750,000	-
Unlisted ⁽⁸⁾	7/07/2017	7/07/2023	0.125	2,000,000	2,000,000
Unlisted ⁽⁸⁾	7/07/2017	7/07/2024	0.125	2,000,000	-
Unlisted ⁽⁸⁾	7/07/2017	7/07/2025	0.125	2,000,000	-
Unlisted ⁽⁸⁾	7/07/2017	7/07/2026	0.125	2,000,000	-
Unlisted ⁽¹⁾	28/11/2017	14/12/2022	0.136	500,000	125,000
Unlisted ⁽¹⁾	28/11/2017	14/12/2022	0.141	5,300,000	1,325,000
Unlisted ⁽¹⁾	28/11/2017	14/12/2022	0.148	400,000	100,000
Unlisted ⁽¹⁾	1/12/2017	14/12/2022	0.140	200,000	50,000
Unlisted ⁽⁹⁾	05/03/2018	13/03/2028	0.147	5,100,000	-
Unlisted ⁽¹⁰⁾	05/03/2018	13/03/2028	0.147	2,000,000	1,000,000
Unlisted ⁽¹⁾	05/03/2018	13/03/2028	0.171	1,300,000	-
Unlisted ⁽¹⁾	30/04/2018	08/06/2028	0.136	500,000	-
Unlisted ⁽¹⁾	30/04/2018	08/06/2028	0.117	1,000,000	-
Unlisted ⁽¹⁾	16/06/2018	16/06/2028	0.105	600,000	-
Unlisted ⁽¹⁾	12/07/2018	17/07/2028	0.107	500,000	-
Unlisted ⁽¹⁾	19/11/2018	5/10/2028	0.103	400,000	-
Total				<u>136,700,000</u>	<u>53,100,000</u>

Notes to the Appendix 4E

For the year ended 31 December 2018

14. SHARE-BASED PAYMENTS (continued)

- (1) Options issued to employees and consultants which vest equally over a 4-year period on each anniversary of the grant date.
- (2) 50,000,000 unlisted options were issued to the CEO, Lou DiNardo, on 30 September 2016 with an expiry date of 30 September 2021. 23,000,000 options vest equally over a 4-year period. 27,000,000 options vest equally over a 4-year period after attainment of specific performance criteria.
- (3) 7,000,000 unlisted options were issued on 1 November 2016 to Foster Stockbroking Pty Ltd as consideration for acting as Sole & Exclusive Lead Manager to the Placement announced on ASX on 26 October 2016. These options will vest when the share price is trading at 150% of the exercise price i.e. \$0.27 (based on 30 day VWAP) for 30 consecutive trading days, are exercisable before 1 November 2019.
- (4) 6,000,000 unlisted options issued to consultants on 16 February 2017. 50% of these options vested immediately and expire on 16 February 2022. 50% vested on 31 December 2017 as long as continuous service is provided and expire 31 December 2022.
- (5) 20,000,000 unlisted options were issued to employees on 31 March 2017. 8,000,000 of these options vest equally over a 4-year period as long as continuous service is provided. 12,000,000 of these options vest equally over a 4-year period subject to the employee achieving various operational KPIs as determined by the Board, and continuous services. After vesting, all options expire 31 March 2022.
- (6) 8,000,000 unlisted options were issued to Directors of which 25% of the options vest on each anniversary date of the offer date (31 January 2017) so long as continuous service is provided and expire five years from each vesting date.
- (7) 7,000,000 unlisted options were issued to Directors of which 25% of the options vest on each anniversary date of the offer date (1 February 2017) so long as continuous service is provided and expire five years from each vesting date.
- (8) 8,000,000 unlisted options were issued to Directors of which 25% of the options vest on each anniversary date of the offer date (7 July 2017) so long as continuous service is provided and expire five years from each vesting date.
- (9) 5,100,000 unlisted options issued to employees on 13 March 2018 and expiring on 13 March 2028 with the following vesting terms:
 - 1,200,000 vest 5 July 2021;
 - 800,000 vest 7 October 2021;
 - 650,000 vest 15 January 2020;
 - 1,500,000 vest 9 December 2019;
 - 800,000 vest 15 January 2021;
 - 150,000 vesting equally over a 4-year period from 5 March 2018.
- (10) 2,000,000 unlisted options issued to consultants on 13 March 2018, expiring on 13 March 2028, with the following vesting terms: 25% on 30 April 2018, 25% on 30 September 2018 and 50% on 13 February 2019.

The above options are exercisable after vesting and at any time on or before the expiry date.

(d) Options forfeited, lapsed and cancelled

The following options were forfeited during the year due to cessation of employment:

- 500,000 unlisted options granted to a consultant on 21 December 2016;
- 20,250,000 unlisted options granted to an employee on 10 August 2017;
- 500,000 unlisted options granted to an employee on 28 November 2017.

The following options lapsed during the year:

- 6,250,000 unlisted options granted to an employee on 10 August 2017 due to cessation of employment;
- 11,000,000 unlisted options issued to directors expired on 4 December 2015.

The following options were cancelled during the year:

- 500,000 unlisted options granted to a consultant on 21 December 2016.

Notes to the Appendix 4E

For the year ended 31 December 2018

14. SHARE-BASED PAYMENTS (continued)

(e) Movements during the year

The following table illustrates the number and weighted average exercise prices (WAEP) of, and movements in, share options during the year:

	2018 Number	2018 WAEP (US\$)	2017 Number	2017 WAEP (US\$)
Outstanding at 1 January	164,300,000	0.161	85,300,000	0.160
Granted during the year	11,400,000	0.142	84,000,000	0.163
Forfeited during the year	(21,250,000)	(0.128)	(5,000,000)	(0.194)
Cancelled during the year	(500,000)	(0.215)	-	-
Lapsed during the year	(17,250,000)	(0.150)	-	-
Outstanding at 31 December	136,700,000	0.165	164,300,000	0.161
Exercisable (vested and unrestricted) at 31 December	53,100,000		34,650,000	

The weighted average remaining contractual life for the share options outstanding at 31 December 2018 is 3.83 years (2017: 4.40 years).

The weighted average fair value of options granted during the year was US\$0.108 (2017: US\$0.11)

The range of exercise prices for options outstanding at the end of the year was US\$0.105 to US\$0.258 (2017: US\$0.108 to US\$0.258).

(f) Options pricing model

The fair value of the equity-settled share options granted under the LTIP and DOOP is estimated as at the date of grant using a Black Scholes Option Pricing model. The following table lists the inputs to the models used for the valuation of options during the year ended 31 December 2018:

	Number of options	Fair value at measurement date \$US	Share price at Grant Date US\$	Exercise price US\$	Expected volatility (%)	Risk-free interest rate (%)	Expected life of options in years
Employee	5,100,000	0.124	0.140	0.147	97.3	2.75	10.0
	1,300,000	0.123	0.140	0.171	97.3	2.75	10.0
	500,000	0.097	0.110	0.136	97.3	2.77	10.1
	600,000	0.094	0.105	0.105	97.3	2.67	10.0
	500,000	0.089	0.089	0.107	97.3	2.64	10.0
	400,000	0.074	0.074	0.103	97.3	2.64	10.0
Consultants	2,000,000	0.124	0.140	0.147	97.3	2.75	10.0
	1,000,000	0.098	0.110	0.117	97.3	2.77	10.1

The expected dividend yield for all options granted during the period was nil. The expected life of the share options is based on historical data and is not necessarily indicative of exercise patterns that may occur. The expected volatility reflects the assumption that the historical volatility over a period similar to the life of the options is indicative of future trends, which may not necessarily be the actual outcome.

(g) Performance rights pricing model

The fair value of the performance rights granted under the LTIP is estimated as at the date of grant using the share price at the date of grant. The following table lists the inputs to the models used for the valuation of performance rights during the year ended 31 December 2018:

	Number of Performance rights	Grant date	Fair value at grant date \$US
Employee	1,000,000	8/06/2017	0.110
	15,000,000	11/06/2018	0.104
	<u>16,000,000</u>		

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For the year ended 31 December 2018

14. SHARE-BASED PAYMENTS (continued)

(h) Restricted Stock Units issued during the year as share based payments

The Company granted the following Restricted Stock Units to employees during the year. The fair value of the Restricted Stock Unit granted is estimated using the share price on the date of the grant.

	Number of RSUs granted	Grant date	Fair value at grant date \$US
	2,950,000	8/06/2018	0.103
	50,000	17/7/2018	0.107
Employee	300,000	6/8/2018	0.089
	200,000	3/9/2018	0.089
	150,000	8/10/2018	0.089
	200,000	19/11/2018	0.088
	<u>3,850,000</u>		

15. OPERATING SEGMENTS

For management purposes, the Group is organised into one operating segment, being the technological development of designs that can be licensed to OEM (Original Equipment Manufacturer) Customers, End Users and System Integrators based on Artificial Neural Networks.

All the activities of the Group are interrelated, and each activity is dependent on the others. Accordingly, all significant operating disclosures are based upon analysis of the Group as one segment. The financial results from this segment are equivalent to the financial statements of the Group as a whole.

The Group currently derives revenue from BrainChip Inc., located in the USA, and BrainChip SAS, its France based subsidiary.

Geographically, the Group has the following revenue information based on the location of its customers and non-current assets from where its investing activities are managed.

	2018 US\$	2017 US\$
Revenue from external customers		
North America	722,586	24,565
Europe, Middle East & Asia (EMEA)	225,403	244,931
Revenue from continuing operations	<u>947,989</u>	<u>269,496</u>

Customers representing more than 10% of revenues in the current year amounted to \$712,500 from a North American customer comprising license revenue of \$200,000 and development service revenue of \$512,500. Development service revenue includes (i) further development of existing licensed technology; and/or (ii) engineering services for existing licensed technology.

In the prior year, customers representing more than 10% of revenues totaled \$194,728 of development service revenue from European customers, comprising Customer A: \$89,807; Customer B \$76,529 and Customer C \$28,392.

	2018 US\$	2017 US\$
Non-current assets		
North America	1,018,340	1,117,018
EMEA	982,188	1,930,828
	<u>2,000,528</u>	<u>3,047,846</u>

Notes to the Appendix 4E

For the year ended 31 December 2018

16. EVENTS AFTER BALANCE DATE

In February 2019, Stephe Wilks was appointed as Non-Executive Director and Chairman of the Company's Board.

No other matters or circumstances have arisen since the end of the half-year which significantly affected or may significantly affect the operations of the Consolidated Entity, the results of those operations, or the state of affairs of the Consolidated Entity in subsequent financial periods.

17. DISCONTINUED OPERATION

	2017 US\$
Sale of ORRI and dissolution of subsidiaries 2017	28,372
Net gain from discontinued operations after tax	28,372

(a) Sale of ORRI and dissolution of subsidiaries 2017:

During 2017, BrainChip dissolved its wholly owned subsidiaries, Eternal Resources Pty Ltd and Indian Ocean Minerals Investment Corporation and sold an interest in an overriding royalty interest agreement ("ORRI") to a third party.

	2017 US\$
(i) Financial performance	
Other revenues – oil & gas royalties	5,220
Other revenues – sale of interest in overriding royalty interest	32,289
General & administrative expenses	(9,137)
Operating gain from discontinued operations	28,372
Income tax expense	-
Operating gain attributable to discontinued operations after tax	28,372
Gain on dissolution of subsidiaries	-
Income tax expense	-
Gain on dissolution of subsidiaries after tax	28,372
Net gain attributable to discontinued operations	28,372
(ii) Cash flow information.	
Net cash outflow from operating activities	(3,917)
Net cash inflow from investing activities	32,289
Net increase in cash generated by the disposal	28,372