

BrainChip Holdings Ltd September 2018 Quarter Update

- Announcement of Akida[™] Neuromorphic System-on-Chip (NSOC) architecture
- Partnership with Telesikring to deliver AI-powered Video Analytics to Police and Security Customers across Scandinavia
- Acquistion of License to Cybersecurity technology from Democritus University of Thrace, Greece
- Gaming Partners International (GPI) Demonstration of Integrated Vision System at the G2E gamining conference in Las Vegas, Nevada

San Francisco – 31 October, 2018 BrainChip Holdings Ltd ("BrainChip" or the "Company") (ASX: BRN), the leading neuromorphic computing company, is pleased to provide an update for the quarter ended 30 September 2018 to accompany the Company's quarterly cash flow report.

Significant developments subsequent to the last quarter update include: the introduction of the Akida[™] Neuromorphic System-on-Chip Architecture, a partnership with Telesikring in Scandanavia, the license of Cybersecurity technology from Thrace University and the demonstration of the Company's vision system with GPI's Automated Table Solution (ATS[™]) at the G2E gaming conference in Las Vegas, Nevada.

<u>Markets</u>

Automotive developments continue with multiple multinational companies, both automotive manufacturers and third-party suppliers. Engagements include BrainChip Studio and Accelerator for demonstration purposes and the Akida architecture and development environment for Autonomous Vehicle (AV) developments and Advanced Driver Assisted Systems (ADAS). In AV and ADAS applications, automotive manufacturers and third-party providers are high-value customers with critical needs to deploy AI solutions at the edge in automobiles. This includes radar, lidar and ultrasound integrated at the transducer, thereby reducing the amount of data transmitted across the internal bus of an automobile to reduce latency and free both bus bandwidth and central processing power. With the Akida Development Environment potential customers can fully simulate a low-power edge deployed SNN.

Civil Surveillance and Public Safety engagements have increased significantly in the US and Europe as the Company's sales organization has been expanded to include end-user coverage in all major markets. Major metropolitan law enforcement agencies throughout Europe and the US have ongoing or pending trials of BrainChip Studio that will reach completion in 2018 and early 2019. Original Equipment Manufacture engagements are robust and include surveillance manufacturers, global server providers and global storage providers that currently serve the Civil Surviellance, Public Safety and Media and



Entertainment markets. A first commercial agreement with a large surveillance manufacturer is expected by year end 2018.

Gaming Partners International joint development continues on schedule. The Advanced Table Solution was well received by customers at the Las Vegas G2E Conference in October of 2018. The Company expects to execute a Commercial Agreement with GPI in November 2018 in anticipation of ATS installations in 2019. The agreement provides BrainChip a revenue share of 25% of all ATS deployments that include the vision system. The agreement is expected to have a term of 10 years. Revenue is expected to be ongoing on a dollars per table per day basis.

Technology

The Akida device is a complete Neuromorphic System-on-Chip (NSoC) and represents over a decade of work by Peter van der Made and our engineering team. The Akida Development Environment (ADE) was released on 24 July 2018. The ADE provides full simulation of the Akida device and allows customers to implement a SNN as a CNN to SNN conversion as well as develop native SNNs for their use cases. The Akida device will have several learning modes including inference and autonomous learning. The Akida kernel has been implemented to demonstrate industry standard image benchmarks, CIFAR10 and MNist. The Company also has demonstrated the Akida kernel with a DVS camera and has implemented multilayer SNNs. Engineering has begun to implement the Cybersecurity algorithms licensed from Thrace University which address critical points of vulnerability in network security.

Porting existing Convolutional Neural Networks (CNNs) for inference to SNNs opens a large and immediate market while other learning modes (Autonomous Supervised and Unsupervised) support future use cases. The Company expects to move to an FPGA hardware implementation of Akida during the fourth quarter of 2018 for internal use.



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The Akida NSoC Architecture was released 11 September 2018. The Akida device includes data-to-spike converters for pixel based vision systems and will evolve as the Company works with early adoption customers to include incremental converters. Following the architecture announcement, the Company plans to provide the Akida Development Environment to a limited number of major customers, followed by a larger distribution. The Company presented an update on BrainChip Studio/Acclerator and the Akida development to investors and editors in Sydney on 30 October, which will be followed by a presentation in Melbourne on 1 November.

Akida N	SoC Archited	ture	
Conversion Complex * Converts multiple data types to spikes * Pixel for vision * Audio for sound * DVS for dynamic vision sensors * Data for finited: and cybersecurity	Pixel-Spike	Processor	On-Chip Processor Complex * System and data management * Training/Inference control
Sensor I/F for Embedded Applications * Pixel * Analog * Audio * Digital	Audio-Spike		Memory I/F * Flash for boot and program/data * LP/DDR4
* DVS Sensor Data Interface for Co-Processor Applications * PCle * CAN * USB 3.0 * Unit	Conversion Complex Data Interfaces ακἶδ	α Neuron Fabric	Multi-Chip Expansion For Server Acceleration * High-Speed Serial Interface * Expandable to 1024 devices

Cash Flow

The Company finished the September 2018 quarter with a cash balance of US\$9.995M. Cash receipts for the quarter were US\$246,000. Headcount at the end of the quarter was 35 fulltime employees and two fulltime contractors in sales and marketing.

In the June quarter the Company invoiced SNTech US\$609,135 based on an existing Licensing and Development Agreement. SNTech has disputed the invoice and the Company has intiated a full audit of SNTech's books, records and source code. The results of the audit are expected in November 2018.

<u>Outlook</u>

Going forward, the Company expects an increase in cash reciepts from OEMs, System Integrators and other partners in the December quarter of 2018. The Company's sales pipeline continues to grow and now includes over 500 leads, 105 active accounts, 55 qualified opportunities and 17 design wins. The Company currently supports approximately 21 committed or active trials for which most are covered by Non-Disclosure Agreements.



As Akida engagements mature the Company will provide investors insight with regard to activity in the following markets:

Industrial – Internet-of-Things (IoT), Agricultural Technology, Financial Technology, Cybersecurity, Robotics, Process Control and Manufacturing Automation Automotive – ADAS and AV Consumer – Cell Phone, Personal Computing and Home Security

These markets include large volume opportunities in edge devices as well as high value opportunites in big data, cloud and enterprise solutions.

Safe Harbor Statement

This press release contains forward-looking statements, which address a variety of subjects including, for example, our statements regarding expected growth rates, expected product offerings, product development, marketing position and technical advances. Statements that are not historical facts, including statements about our beliefs, plans and expectations, are forward-looking statements. Such statements are based on our current expectations and are subject to a number of factors and uncertainties, which could cause actual results to differ materially from those described in the forward-looking statements.

About BrainChip Holdings Ltd (ASX: BRN)

BrainChip Holdings Ltd is the leading neuromorphic computing company solving complex problems with customers and partners that make the world a more productive place and improve the human condition. The Company has developed a revolutionary new spiking neural network technology that can learn autonomously, evolve and associate information just like the human brain. The technology, which is proprietary, is fast, completely digital and consumes very low power. <u>www.brainchipinc.com</u>.



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