



ASX PRESS RELEASE

15 April 2016

## **BrainChip Signs Joint Development and Marketing Agreement with Inilabs GmbH, developer of the dynamic vision sensor (DVS)**

BrainChip Holdings Ltd (ASX: BRN), is pleased to announce that wholly owned subsidiary, BrainChip, Inc. of a developer of a revolutionary new Spiking Neuron Adaptive Processor (SNAP) technology that has the ability to learn autonomously and associate information just like the human brain, has signed a strategic, joint development and marketing agreement with Inilabs GmbH, the Swiss developer and manufacturer of a revolutionary new vision sensor that works like the human retina.

The dynamic vision sensor (DVS) works like the retina; only sending information when something is changing or moving. This is an exciting technology that responds much faster than a normal camera, has an extremely high intra-scene dynamic range allowing it to simultaneously observe object in bright sunlight and dark shadow, and outputs events from individual pixels – similarly to the code that our retinae use; it is therefore a perfect match to BrainChip's Neuro-Computing SNAP technology. BrainChip used the DAVIS vision sensor, which is an enhancement of the DVS, in the Autonomous Visual Feature Detection demonstration. The DVS and DAVIS vision sensors use the same AER (Address Event Representation) interface bus as BrainChip SNAP devices which has become a neuromorphic- industry standard.

The Inilabs web site (<http://Inilabs.com>) describes this device as follows: "Only the local pixel-level changes caused by movement in a scene are transmitted – at exactly the time they occur. The result is a stream of events at microsecond time resolution, equivalent to or better than conventional high-speed vision sensors running at thousands of frames per second." The DVS communicates in 'spikes', modelling the short electrical bursts that our nervous systems use; the BrainChip SNAP technology directly processes such spikes, and has the same low energy requirements. Inilabs GmbH is participating as a team member in the US DARPA Fast Light Autonomy UAV program.



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Under the terms of the agreement, BrainChip and Inilabs GmbH will jointly, non-exclusively, promote each other's products and services to create a referral relationship, under which each will refer potential customers to the other party in exchange for the opportunity to enhance each other's selling proposition by offering the customers an integrated hardware offering, and increasing the chances of sales success in the emerging neuromorphic technologies markets.

"We are very excited to undertake this strategic partnership with Inilabs, whose DVS is well suited to detect fast moving objects. They are a partner with extensive industry experience that will help us accelerate our sales strategy. This cooperative agreement is a testimony to BrainChip's ongoing efforts to expand marketing; it enables the marketing of visual feature-detection solutions used in drones, robotics and self-driving cars" said Peter van der Made, Founder and CEO of BrainChip. "We look forward to this collaboration, thereby expanding our business opportunities in neuromorphic technologies markets", said Sim Bamford, CTO of Inilabs.

### **About Inilabs GmbH**

Inilabs GmbH is a spin-off from the Institute of Neuro-informatics (INI) at the University of Zurich and the ETH Zurich, Switzerland. It develops and sells neuromorphic technologies such as the DVS and a dynamic audio sensor, which have been created by researchers at INI. Their founders were pioneers and established some of the foundations of this field, and continue to lead the world in applications of neuromorphic engineering. The DVS is now in use at over 100 laboratories and companies around the world, and is under active research in industries that include aerospace, automotive, consumer electronics, industrial vision and security. Additional information is available by visiting <http://inilabs.com/>

### **About BrainChip Holdings Ltd (ASX:BRN)**

BrainChip Inc, located in Aliso Viejo, CA, has developed a revolutionary new Spiking Neuron Adaptive Processor (SNAP) technology that has the ability to autonomously and rapidly learn and associate information just like the human brain. SNAP technology learns in seconds. This exemplifies a new level of machine learning that is expected to surpass deep learning, which requires days or weeks to train. The SNAP technology is fast, completely digital, and consumes very low power. Additional information is available by visiting [www.brainchipinc.com](http://www.brainchipinc.com)



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### **Forward Looking Statements**

This press release may contain certain forward-looking statements and information, as defined within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, and is subject to the Safe Harbor created by those sections. This material contains statements about expected future events and/or financial results that are forward-looking in nature and subject to risks and uncertainties. Such forward-looking statements by definition involve risks, uncertainties and other factors, which may cause the actual results, performance or achievements of BrainChip Holdings Limited to be materially different from the statements made herein.

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