Disclaimer

This presentation is not a prospectus nor an offer for securities in any jurisdiction nor a securities recommendation. The information in this presentation is an overview and does not contain all information necessary for investment decisions. In making investment decisions in connection with any acquisition of securities, investors should rely on their own examination of the assets and consult their own legal, business and/or financial advisers.

The information contained in this presentation has been prepared in good faith by BrainChip Holdings Ltd, however no representation or warranty expressed or implied is made as to the accuracy, correctness, completeness or adequacy of any statements, estimates, opinions or other information contained in this presentation.

To the maximum extent permitted by law, BrainChip Holdings Ltd, its directors, officers, employees and agents disclaim liability for any loss or damage which may be suffered by any person through the use or reliance on anything contained in or omitted in this presentation.

Certain information in this presentation refers to the intentions of BrainChip Holdings Ltd, but these are not intended to be forecasts, forward looking statements or statements about future matters for the purposes of the corporations act or any other applicable law. The occurrence of events in the future are subject to risks, uncertainties and other factors that may cause BrainChip’s actual results, performance or achievements to differ from those referred to in this presentation. Accordingly, BrainChip Holdings Ltd, its directors, officers, employees and agents do not give any assurance or guarantee that the occurrence of the events referred to in the presentation will actually occur as contemplated.
BrainChip has developed a revolutionary Spiking Neuron Adaptive Processor (SNAP) technology that learns autonomously and unsupervised, evolves and associates information just like the human brain.

- SNAP technology provides rapid and autonomous learning, confirmed in the Autonomous Visual Feature Extraction demonstration in March 2016.
- SNAP is deployable across multiple fast-growing markets.
- BrainChip is following a proven Semiconductor industry Intellectual Property (IP) licensing model to deriving its revenue from License, Engineering and Royalty fees.

**KEY MATRIX**

<table>
<thead>
<tr>
<th>ASX Code</th>
<th>BRN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market Cap (post Spikenet acquisition)</td>
<td>A$96.7M</td>
</tr>
<tr>
<td>Share Price (25 Aug 2016)</td>
<td>A$0.13</td>
</tr>
<tr>
<td>Issued Shares (post Spikenet acquisition)</td>
<td>743.9M</td>
</tr>
<tr>
<td>Options</td>
<td>24.55M</td>
</tr>
<tr>
<td>Cash (30 Jun 2016)</td>
<td>US$2.90M</td>
</tr>
</tbody>
</table>
BrainChip has acquired France-based Computer Vision Technology Company – Spikenet Technology

Spikenet was established in 1999, and has developed breakthrough software for artificial vision and visual pattern recognition.

Spikenet provides programs that are able to learn to recognise objects, faces and patterns. The technology has applications across a range of sectors including security, transport, media, manufacturing and gaming.

Acquisition summary

- BrainChip has acquired 100% of Spikenet Technology
- Acquisition cost was 10.4 million shares in BrainChip and 529,598 euros
- Includes Spikenet’s product library and related patent
- Cash component fully funded from internal resources
Transaction highlights

- Complimentary technology offering with BrainChip focusing on embedded hardware Artificial Intelligence and Spikenet on software only solution
- The combined BrainChip and Spikenet solution holds the potential to create the world's most technically advanced, biologically inspired computer vision products
- The acquisition provides an immediate path to commercialisation for BrainChip's SNAP technology
- Expands the BrainChip offering to include software and hardware solutions

- Expected to give BrainChip an immediate source of revenue, recurring income and a ready customer base
- Attractively priced acquisition (circa $2.2 million)
- BrainChip can now provide a logical and seamless upgrade path for customers moving from software to hardware solutions
Technological advantage
Spikenet’s breakthrough software

- The brain uses the order in which neurons fire spikes to code information – Spikenet mimics this process
- Spikenet’s Technology works similar to BrainChip’s technology but is a software only solution
- Based on 20 years of research – Spikenet uses image algorithms directly inspired by the strategies used by the human visual system
- Spikenet’s technology holds the potential to outperform even the most sophisticated machine vision systems (aside from BrainChip) and is able to analyse a complex scene in seconds
- Spikenet will gain an autonomous learning function when integrated with BrainChip
# The Spikenet advantage

<table>
<thead>
<tr>
<th>High speed</th>
<th>Accuracy</th>
<th>Faster deployment</th>
<th>Adapts to real life</th>
<th>Learning capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spikenet can detect more than 5,000 patterns per second on a standard PC</td>
<td>Recognition of exact image and similar patterns with minimal false positives</td>
<td>Software does not require a chip to be produced so it can be deployed faster</td>
<td>Adapts to low resolutions, real life image conditions, still and moving cameras and outdoor constraints</td>
<td>Easier to train to recognise visual patterns when compared to rival “deep learning” solutions</td>
</tr>
</tbody>
</table>
Spikenet + SNAP = A game changer?

Spikenet's software is predicted to become far more effective when it is supplemented with BrainChip’s SNAP autonomous learning technology.

A combined solution is expected to create a product that is faster, far more efficient, requires less computing power and is cheaper than anything currently available.

The company’s objective in combining Spikenet and BrainChip is to provide a game changing technological advantage and a product that is superior to anything else currently in the market.
Rival advance AI systems like IBM’s True North uses “Deep Learning”.

Deep Learning networks don’t actually learn; they need extensive programing to “train” the system how to execute a job function. This is very time and resource consuming.

A BrainChip/Spikenet solution would go beyond Deep Learning with autonomous learning that would require very little or no training program.

This would enable BrainChip to offer solutions that cut the training time by 95% or more in most cases.
Case study: Shark Detection & ID

Problem

- Providing an automatic shark detection and identification system that can operate in all water and weather conditions with minimal false positive alerts.

Current systems

- Use traditional image processing algorithms with frame-based pixel data processing
- Processing power and are power intensive, particularly if high resolution images and faster frame rates are used in the analysis
- Industry turning to Convolution Neural Networks (CNNs) with “deep learning” (backed by Google, Microsoft, etc.)
- But deep learning on CNNs is also resource intensive. Needs massive cloud-based servers to run
- CNNs don’t actually learn like humans as it requires a special training programs and thousands of sample photos to recognise objects

BrainChip solution

- BrainChip is developing a revolutionary solution that is able to be “taught” quickly, and be used on drones and other portable platforms to significantly reduce costs. The solution may have wide ranging applications.
Case study: Shark Detection & ID

Phase 1
Create a software solution to automatically detect sharks

Phase 2
Identify all common species of sharks and use an embedded chip solution to achieve greater speed and efficiency.

Create a software solution to automatically detect sharks
## Technology comparison

### Estimated time it would take to program a shark detection system using the different technologies

<table>
<thead>
<tr>
<th>Deep Learning System</th>
<th>Spikenet only</th>
<th>BrainChip/Spikenet</th>
</tr>
</thead>
<tbody>
<tr>
<td>240 man hours to train</td>
<td>10 man hours</td>
<td>Takes 2 man hours</td>
</tr>
<tr>
<td>System would have to run on a large computer network and still be prone to giving false positives</td>
<td>System would run on a laptop and &lt;5% false positives</td>
<td>System would run on a laptop or a small microchip on the drone with &lt;5% false positives</td>
</tr>
</tbody>
</table>
Multiple applications

One technology – thousands of potential solutions

Facial recognition

Mobile Devices

Manufacturing

Airport security

Gaming

Embedded vision sensors

Internet-of-Things (IoT)

Media analysis

1/09/2016
Commercial advantages of acquisition
### Commercial benefits

<table>
<thead>
<tr>
<th>New product opportunities</th>
<th>Path to market</th>
<th>Instant revenues</th>
<th>Seamless customer upgrade path</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to offer new solutions ranging from software through to hardware, and also to reconnect with past enquirers of SNAP who were interested in a software only solution</td>
<td>Immediate commercially ready product</td>
<td>A recurring revenue stream from existing Spikenet contracts. Additional revenue expected to be added from current marketing activities</td>
<td>Clear upgrade path for customers looking for a software solution today and who want to upgrade to a hardware solution in the future</td>
</tr>
</tbody>
</table>
Spikenet’s commercial contracts

Spikenet will bring immediate revenue to BrainChip through existing commercial contracts

Bordeaux International Airport

- Spikenet currently has a contract with Bordeaux International Airport. The Spikenet video surveillance is deployed to watch over all aircraft parking stands to detect illicit intrusion.

- Spikenet reduces false alarms by 80% compared to the previous intrusion detection system that was based only on motion detection, which was prone to giving inaccurate warnings due to movement (i.e. wind).

- Spikenet is a superior system because it can readily identify a wide range of objects (i.e. people, animals, planes, etc.) and can whitelist and blacklist objects to avoid false alarms.

- Ongoing maintenance contract with plan to deploy into other areas for use in parking management, left luggage detection and people counting.
Spikenet’s commercial contracts

Spikenet’s playing card solution, SPADE, is already in use in a number of Las Vegas casinos

Gaming table surveillance

- Spikenet currently deploys its SPADE surveillance solution in numerous gaming locations throughout the world including Las Vegas casinos and large cruise ships
- SPADE has been approved by the Nevada Gaming Board
- The ready to use solution adds security to casino card games and can also assist with bet tracking and yield management
- SPADE can be used with any card type, removing the need to change cards or dealing shoes and is cheaper than using an electronic playing card-reader
- Easy to install and can be quickly fitted to any playing table and any type of card game.
The Spikenet acquisition provides a low risk entry point for customers not yet ready for a SNAP hardware solution.

**Software only**
- Low risk and low cost entry point for customers to use SNAP
- Near term sales opportunities

**Hardware only**
- Total solution chip that can be embedded into phones, cars etc.
- Highest performance solution
Experienced team

- Spikenet brings an experienced team that will assist in the growth of BrainChip
- Team includes engineers, PhD’s, technicians and neuroscientists with a combined 95 years experience
- Spikenet’s team are leaders in their field and bolster an already strong US presence
- Technical teams now on two major continents that can more readily address or implement local technical solution
## Compelling value acquisition

<table>
<thead>
<tr>
<th>Acquisition</th>
<th>Spikenet</th>
<th>Nervana Systems</th>
<th>Turi</th>
<th>DeepMind Technologies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acquired by</strong></td>
<td>BrainChip</td>
<td>Intel</td>
<td>Apple Inc.</td>
<td>Google</td>
</tr>
<tr>
<td><strong>Technology</strong></td>
<td>Artificial vision technology based on the human visual system</td>
<td>Intelligent machine learning</td>
<td>Intelligent machine learning platform</td>
<td>Machine learning and visual processing technology</td>
</tr>
<tr>
<td><strong>Acquisition price</strong></td>
<td>$2m</td>
<td>$400m</td>
<td>$250m</td>
<td>$600m</td>
</tr>
<tr>
<td><strong>Revenue multiple</strong></td>
<td>&lt;20x</td>
<td>222x</td>
<td>40x</td>
<td>xx</td>
</tr>
<tr>
<td><strong>Technology comparison</strong></td>
<td>• No intensive training required</td>
<td>• Uses Deep Learning algorithms requiring intensive training</td>
<td>• Uses Deep Learning algorithms requiring intensive training</td>
<td>• Uses Deep Learning algorithms requiring intensive training</td>
</tr>
</tbody>
</table>

• Software and Hardware solutions

---

1/09/2016

Private & Confidential
Summary

Merging of complementary technologies offers potential to create the world’s most technically advanced autonomous learning enabled system

Accelerates commercialisation opportunities for BrainChip’s SNAP technology

Expands the offering to include software and hardware solutions

Significantly enhances BrainChip’s sales pipeline, provides good customers and immediate recurring income

BrainChip can now provide a logical and seamless upgrade path for customers moving from software to hardware solutions

Additional technical expertise will assist in accelerating BrainChip’s growth
Thank you

Company Contacts:
Neil Rinaldi
Non-Executive Director
nrinaldi@brainchip.com.au
Tel: (+61) 417 178 746

Nerida Schmidt
Company Secretary
nschmidt@brainchip.com.au

Media
Ben Grubb
Media and Capital Partners
ben.grubb@mcpartners.com.au
Tel: (+61) 414 197 508

www.brainchipinc.com
Appendix
SNAP’s Unique Features

- **Next Generation rapid real time learning**, learns autonomously within seconds
- A revolutionary custom **digital hardware design**, no traditional processing core, no firmware, no external memory
- **Real time recognition** at very **low latency**
- **Massive parallel execution** - all neural nodes are updated at the same time, enabling a **speed thousands of times faster than peer software neural networks**
- Performs **consistently at exceptionally high speed** and does not slow down with network size
- **Significantly lower power consumption** enables large networks to be integrated into portable devices
SNAP Solutions Block Diagram

Signal Conditioning

BrainChip Solution

SNAP-64 Core
Configurable Low Power SNN
Low Latency Autonomous Feature Extraction

Low Power SNN
Labeling Network

Optional Partner IP

Actionable Labeled Data

Environmental Sensory Data
Unsupervised Learning –
The New Frontier

• 15 March 2016 – Release of Milestone 3 the Autonomous Visual Feature Extraction Neural Network with a Client / Server Application tool

• Demonstrated SNAP based Real Time Pattern Learning and Recognition working in a chip (FPGA) hardware

• Autonomous and Unsupervised Learning at 1Mhz matching camera time resolution

• Milestone 3 AVFE Video Demo:
Marketing Strategy - Partners

TECHNOLOGY
RAPID LEARNING NEUROMORPHIC IP

Future Partners...

ABR
APPLIED BRAIN RESEARCH

T.B.A.
PARTNER

T.B.A.
PARTNER

iniLabs

T.B.A.
PARTNER

Projected to reach USD 21.23 billion by 2020

expected to reach USD 233.13 billion in 2021

expected to reach USD 5.59 Billion by 2020

grow from $2.77 Billion in 2015 to $6.19 Billion by 2020

now worth 1.86 Trillion dollars annually

from nearly $30 billion in 2015 to more than $76 billion in 2020