

**MEDIA RELEASE**

**World First look at CrocSpotter Ai Algorithm live from Cairns. Australian  Search and Rescue drone company Westpac Little Ripper working with AWS and UTS.**

**DETAILS OF MEDIA EVENT**

**WHEN**   Thursday, September 26

**TIME** 10.30 am to 10.45 am a live streaming cross to Brisbane from North Queensland

**WHERE**                Media event to take place from two locations:-

                             **(1)** North Queensland and,

                             **(2)** World of Drones Congress, Brisbane, Australia

**WHO     10.30 am - Brisbane Convention Centre**

* Ben Trollope - CEO - Westpac Little Ripper
* Professor Michael Blumenstein - University of Technology Sydney
* Ben Thurgood, Head of Solutions Architecture NSW and QLD, AWS Public Sector in Australian and New Zealand.
* Jason Argent - Surf Life Saving Queensland

**WHAT** Westpac Little Ripper drone flying in North Queensland with live video stream running revolutionary CrocSpotter Ai Algorithm to Brisbane - World of Drones Congress.

Westpac Little Ripper drones is working with Amazon Web Services (AWS) to produce what is hoped to be the world’s lowest latency high definition video stream running Artificial Intelligence (Ai) analytics via a drone. The companies have been working together for the last 8 months to reduce the latency of the algorithm. CrocSpotter is one of 5 ’spotter’ Ai algorithms developed by The Ripper Group and its other technology partner, University of Technology Sydney.

On Thursday, September 26 at 10.30 am, a live video stream from a Westpac Little Ripper drone flying near Cairns in Far North Queensland, will take place. This will be the first ever live video stream. The CrocSpotter Ai Algorithm function from the Westpac Little Ripper drone will go via AWS on to the big screen at the World of Drones Congress in Brisbane. This will be the first time anywhere in the world a drone running CrocSpotter Ai Algorithm will be seen positively identifying Crocodiles and streamed live.

There will be two teams at different locations operating this world breaking undertaking on Thursday. One at North Queensland at Hartley’s Crocodile Adventures just outside of Cairns in North Queensland from which the Westpac Little Ripper drone will fly over a lagoon in surveillance of crocodiles, and the other team 1691 kms away, will be at the World of Drones Congress in the Brisbane Convention Centre.

Westpac Little Ripper drones carry the Ai Spotter as part of the drone’s payload with the on board video. As the video streams live from the Westpac Little Ripper drone to the pilot on the ground, the algorithm operates by ‘washing’ the video and alerts the pilot to a possible threat below. The threat is immediately highlighted by a flashing red box around the animal, and draws the pilot’s eyes directly to that part of the iPad he uses to fly to drone. The algorithm has a 93% accuracy of identification, and the naked eye between 16-19%!

The first Ai algorithm was SharkSpotter. It was developed in 2017 in response to a series of shark attacks in Northern NSW, with the aim of fast and efficient identification of a threat to swimmers for lifeguards.

Surf Life Saving Queensland, with funding support by the Queensland Government approached Westpac Little Ripper to develop a similar Ai algorithm to SharkSpotter for detection of crocodiles, in response to a series of incidents and increased sightings in 2017/2018 in North Queensland, Australia.

**Westpac Little Ripper**

Ben Trollope, CEO of The Ripper Group said, “The Ripper Group have a suite of Ai Algorithms operating and in development. The Ripper Group operates one of the world’s most advanced fleet of search and rescue drones with the Westpac Little Rippers. A Westpac Little Ripper drone performed the world’s first rescue by a drone at Lennox Head in NSW in January 2018, dropping an inflatable pod to save 2 teenagers in massive surf.”

“Today’s revolutionary unveiling and live stream comes in a tripartite cooperation between Westpac Little Ripper and their technology partners University of Technology Sydney in developing CrocSpotter, and AWS in reducing the video streaming of CrocSpotter Ai to a latency of almost 1 second for first responders. Currently, to run the CrocSpotter Ai algorithm through the Westpac Little Ripper on board video, it has a latency of 10-30 seconds.”

The same team that brought you SharkSpotter, the Ai-powered drone-based technology for protecting our beaches and keeping our wildlife safe, have developed the next breakthrough software for detecting crocodiles in Far North Queensland – CrocSpotter Ai.

**University of Technology Sydney (UTS)**

UTS researchers in the Faculty of Engineering and IT (Professor Michael Blumenstein and Dr Nabin Sharma) have continued their fruitful collaboration with The Ripper Group to develop cutting-edge Ai software deployed via drone on AWS for detecting crocodiles from Mission Beach to Port Douglas. The Queensland Government is keen to see the roll-out of the technology as part of their CrocWise programme to prevent crocodile attacks, but also to develop a better understanding of our crocodile populations from a conservation perspective.

The UTS team have used an Ai technique called Deep Neural Networks to detect the crocodiles via a smart camera from the flying Westpac Little Ripper drones, and have deployed the technology in the cloud. Professor Michael Blumenstein who is part of the UTS team said that the speed of the cloud-based Ai enables the crocs to be spotted in real-time, which is a world-first and a technological breakthrough given the very low latency.

“The technology enables crocodiles to be detected in complex environments including murky and muddy waters in both wetlands and the open ocean. This is the first time that this sort of animal detection drone technology has been deployed via a high-quality video stream at ultra-low latency with the Ai producing a greater than 90 % accuracy to detect crocodiles,” Dr Sharma said.

**Amazon Web Services (AWS)**

The Westpac Little Ripper drone uses Amazon Elastic Compute Cloud (Amazon EC2) instances, to support its online AI image-processing application. To accommodate its increasing image storage needs, the drone uses Amazon Simple Storage Service (Amazon S3) to ingest the aerial images each day. Amazon S3 is highly scalable and reliable, and the drone uses it to store aerial images as raw data.

Elemental Live produces video streams, which ensures uninterrupted video delivery to end users facing high network traffic or bandwidth constraints. It powers the TRG app to create content for a variety of viewers and devices. Elemental Live enables the low latency, which allows the video captured via the drone to be streamed to the app almost in real-time.

Ben Thurgood, Head of Solutions Architecture NSW and QLD, AWS Public Sector in Australia and New Zealand said, “The low latency video stream powered by AWS is critical to ensure information is quickly transmitted to pilots powering the drone. The cloud’s scalability has allowed The Ripper Group to innovate new ways to save lives and protect native crocodile wildlife. Organisations in Australia and around the world continue to leverage the breadth and depth of AWS to deliver innovative citizen services, and address some of the biggest community needs.”

**Westpac**

The Ripper Group have been in partnership with Westpac since 2016 to maintain 17 remotely piloted aircraft systems (RPAS) across New South Wales and Queensland.

Craig Menerey, Regional General Manager, Queensland, said, “Westpac Little Ripper drones have played a pivotal role in shifting the way drone technology is used to protect local communities by identifying sharks, marine life and other hazards, and supporting rescue services in emergency situations.

"Westpac is proud to support the evolution of drone technology to help save lives in coastal and in-land waterways across Australia, and build on our 45 year national partnership with the Westpac Lifesaver Rescue Helicopter Service who have conducted more than 80,000 missions nationally to date," Mr Menerey said.

World of Drones Congress is at the Brisbane Convention Centre September 26 & September 27. The Ripper Group CEO, Ben Trollope, and Professor Michael Blumenstein of UTS will be presenting on September 27 in the Plenary session - Drones in Disaster & Humanitarian Response from 11.00 am to 12.30 pm.

\*\*\*We will be able to supply stills and video from both locations following the streaming on Thursday, September 26.

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