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SOR Enhances Agriculture Automation Technology

Perth, Australia, 27th July 2021 – **Strategic Elements Ltd (ASX:SOR)** is pleased to announce that subsidiary Stealth Technologies has achieved several key development milestones with its sophisticated weed detection technology. The spread of weeds is still a significant issue for crop yields globally, where production losses are estimated in the tens of billions[1] and weeds are becoming increasingly herbicide resistant.

- Sensor **hardware** has been dramatically reduced in size and weight to enable sensors to be installed on a range of farm equipment such as boom sprayers or utes and even potentially drones in addition to the header of a combine harvester.

- Proprietary **software** and algorithms have been upgraded to enable weeds to be detected in crops other than wheat (e.g. barley). Improvements have also been made to system design to allow the assembly of composite point cloud, enabling superior processing and delivering higher weed detection accuracy.

Previous work with collaborators the Australian Herbicide Resistance Initiative and the University of Western Australia School of Agriculture and Environment assisted the Company to achieve early stage validation[2]. **Video** A recent video published by television station GWN7 covers some of the previous material released by the Company https://www.gwn7.com.au/news/7466717-weeds-in-spotlight.

Further testing and optimisation of the **hardware and software upgrades** will be conducted during August a two separate farms sites in Western Australia.

One of these is the UWA farm research facility in Pingelly (approx. 2hrs south east of Perth) targeting one paddock of wheat. The other is in Gillingarra (approx. 2hrs north of Perth, halfway between Gingin and Moora) - targeting two separate paddocks, one with wheat and another with a different type of crop such as barley.

Results of the testing will be available during September. A successful outcome will lead to aspects of the upgraded technology being included into an expanded trial to be conducted in November 2021. This program will see up to 10 farms utilise the Stealth technology solution during the harvesting season.

Technology Background & Opportunity

Available advanced weed detection technologies typically use RGB cameras and different forms of imaging that distinguish weeds and crops via colour. This has serious limitations in broadacre cropping where weeds are often the same colour as crops. The Company is taking a different approach by leveraging the sophisticated sensor, mapping and localisation technology already built and used in its Autonomous Security Vehicle collaboration[3] with US Fortune 100 Company 'Honeywell'.

The need for excessive use of chemicals and production loss costs are significant issues for the global agricultural industry. The estimated cost of weeds in Australian cropping systems alone is at **AUD$3.3 billion[1] annually.** Total annual cost of weeds in the United States are estimated at **$US34.5 billion[1]**.

The value proposition for Stealth is to deploy this technology to farms around the world where large-scale crop farming exists. This include not just crops such as wheat and barley but could be extended to corn, canola, and other large-scale crop types. The usage of this technology together with agronomic techniques that can leverage weed location knowledge could dramatically decrease herbicide input costs to farming whilst maximising crop yields making farming more efficient and profitable for farmers, while at the same time being more environmentally friendly.

Milestones and Schedule of Work for the Agriculture Technology

1. Hardware and software upgrades testing and validation - multiple sources of data collection using upgraded hardware, algorithms for multiple crop types, different air and ground based vehicles, and composite point cloud utilisation. **Q3**
2. Demonstration scale-up – increase end user reference sites at multiple sites and in different environments. A program is being developed to deploy the weed detection technology for up to 10 potential end customer reference sites in the November 2021 harvest. **Q3 and Q4**

AxV Platform

Stealth Technologies' has been collaborating with global Fortune 100 software-industrial company 'Honeywell' to build **autonomous security vehicles** for the correctional sector. Stealth Technologies developed the first 'Autonomous Security Vehicle' of its kind anywhere in the world. The parties are actively seeking to finalise a new agreement to commercialise the Autonomous Security Vehicle.

Stealth Technologies is also designing and delivering an autonomous drone carrying vehicle that automates detection and sensing of chemical, biological, radiological and nuclear agents. The Company is collaborating[4] with Defence Science Technology Group (DSTG), part of the Australian Department of Defence, and the University of Western Australia to build the solution and conduct a live demonstration to Army.

Excutive Director Elliot Nicholls said "the Stealth team has been working incredibly hard to advance the AxV Platform. We are in active discussions with multiple Companies on potential deployments of the AxV Platform (automation technologies and robotics) across security, defence, agriculture, mining and other sectors. We look forward to updating shareholders on these activies where appropriate".

About Strategic Elements Ltd

The Australian Federal Government has registered Strategic Elements as a Pooled Development Fund with a mandate to back Australian innovation. Strategic Elements operates as a 'venture builder' where it generates high risk-high reward ventures and projects from combining teams of leading scientists or innovators. The Company has 100% owned subsidiary companies developing:

1. **Robotics and automation** technology for mining, defence, security, agriculture, transport. Collaboration with Fortune 100 Company 'Honeywell' for Autonomous Security Vehicles[3]. Further agreements with UWA and CSIRO.
2. **Self-charging battery** technology in collaboration with the UNSW and CSIRO[5]. Uses humidity in air to generate electricity. Extremely small, thin, light weight flexible battery cells.
3. **Transparent flexible memory** technology working with the UNSW, CSIRO[6] and VTT (Finland). Enabling flexible plastic and glass surfaces to store and process data instead of needing silicon chips.
4. **Data related** technology acquisition/development has been noted by the Company as a potential area for future venture generation.

Most investors in SOR pay no tax on capital gains from selling their SOR shares as the Company operates under a Federal Government program setup to encourage investment into innovation. The Company is listed on the ASX under the code "SOR". More information on the Pooled Development Program should be read on the Company's website www.strategicelements.com.au .More Information on this release: Mr Charles Murphy, Managing Director Phone: +61 8 9278 2788 admin@strategicelements.com.au

This announcement was authorised for release by Strategic Elements' Board of Directors.

[1]https://invasives.com.au/wp-content/uploads/2019/01/Cost-of-weeds-report.pdf [2]Announced 25/03/2021 [3]Announced 16/10/2020
[4]Announced 6/07/2021 [5]Announced 1/12/2020 [6]Announced 30/07/2020