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24 September 2020

Integumen PLC (to be renamed DeepVerge PLC)

("Integumen" or "Company")

Unveiling of new COVID-19 personalised real-time Breath Test and Digital Health Pass Platform

COVID-19 wastewater Microtox ready for beta testing

Heads of Agreement with Avacta and Aptamer Group for commercial scale supply of SARS-CoV-2 binding agents

Integumen today announces progress for its COVID-19 wastewater detection system, Microtox PD, in collaboration with Modern Water plc ("Modern Water"), Avacta Group plc ("Avacta") and Aptamer Group Limited ("Aptamer"). The Company also today announces the unveiling of a new personalised COVID-19 breath test, Microtox BT, and its complementary Digital Health Pass platform.

Integumen is working with a consortium of companies collaborating to find solutions in the fight against COVID-19 pandemic. The consortium includes Modern Water, Avacta, Aptamer and a major global provider of innovative technology and services for the data era.

Microtox BT and Digital Health Pass - on the spot triaging of COVID-19 infections offer potential to re-open the economy

Integumen recognised that in collaboration with Modern Water , Avacta and Aptamer Group, its real-time detection and alert system could be adapted to detect the level of infection of coronavirus in a breath sample. Adapting the wastewater test, Microtox PD, the Company has designed, built and tested a prototype, Microtox BT, which can analyse the breath and detect the spike protein of SARS-CoV-2 in real-time for those with a high viral load. Microtox BT has undergone extensive internal testing and will now transition to the University of Aberdeen containment level 3 laboratory, to undergo tests directly on the virus followed by a joint trial of up to 5,000 participants in parallel with third parties using reverse transcription polymerase chain reaction ("rtPCR")[i] and Antigen tests. Results are anticipated before the end of the year and Microtox BT is expected to be a Class 1 medical device[ii].

The Company believes Microtox BT has the potential to enable instant real-time testing of people within the community. This could be capable of providing daily triaging of everyone who may or may not demonstrate levels of infection. To "open the economy", Integumen has incorporated a 24 hour Digital Health Pass that indicates if the person tests positive or negative for infection. Matched with blockchain secure date and time stamp of the test, the Company believes Microtox BT and the Digital Health Pass using "one second" QR Code scanners could potentially contribute to enabling the economy to re-open with personalised go/no go entry into venues such as work, events, social locations, public transport and airports.

Microtox PD - wastewater detection system for COVID-19 ready for beta testing

Integumen has completed integration of an Affimer/Aptamer-based real-time SARS-COV-2 detector and alert system into Modern Water's Microtox water contamination system, now called Microtox

PD, for the detection of the coronavirus in wastewater. Microtox PD has now successfully completed initial spike protein testing and validation of SARS-CoV-2 in filtered wastewater and will be transitioned to the University of Aberdeen for full beta testing of the system using real SARS-CoV-2 virus samples in its containment level 3 laboratory.

Integumen has integrated its Rinocloud AI technology to enable continuous learning and improvements as the system gains data in commercial use. Microtox PD, for continuous detection of SARS-CoV-2 in sewage, is anticipated for launch in early 2021 and will be distributed through Modern Water's global footprint of over 3,000 installations.

Avacta and Aptamer Group agreements for commercial scale supply of SARS-CoV-2 binding agents

Integumen has signed Memorandum of Understanding ("MoU") for agreements to be concluded with Avacta (on 13 July 2020) and Aptamer (on 22 June 2020) for the supply of commercial scale quantities of SARS-CoV-2 binding agents. These royalty-bearing, non-assignable, sub-licensable, revocable, worldwide licence agreements are for the use of the respective Affimers from Avacta and Aptamers from Aptamer Group for next-generation sensors providing identification of localised COVID-19 hotspots in wastewater and personalised real-time Breath Test and Digital Health Pass devices.
Further to the announcement of 13 July 2020 in relation to a material transfer agreement ("MTA"), the evaluation of under the MTA has been successful and consequently a Memorandum of Understanding has been signed with Avacta for a commercial agreement, subject to contract. The key points are:

- Integumen will be granted a non-exclusive, royalty bearing, non-assignable, sub-licensable (subject to Avacta's consent), revocable, worldwide licence to use Avacta's Affimer technology for the purpose of using the Affimers as a component in the Integumen End Products : being a COVID-19 SARS-CoV-2 virus detection breath test and a waste water SARS-CoV-2 virus detection system
- Non-exclusive supply by Avacta to Integumen of the Affimers for use in Integumen's scale up and ongoing manufacture of the End Products

Further to the announcement of 22 June 2020 in relation to a MTA, Heads of terms for a commercial technology agreement have been signed with Aptamer Group, subject to contractual commercial agreement, the key points of which are:

- Integumen will be appointed as Global, non-exclusive agent to sell Aptamer Group products (Products) in agreed territories and industry sectors (including wastewater recovery, human food and skin care)
- Initial period 3 years, with 1 year auto renewal
- Integumen can design proprietary diagnostic equipment that make use of the Products
- Each party will negotiate in good faith with a view to executing a Framework Agreement by 6 November 2020

AGM 24 September 2020 - presentation of new COVID-19 platforms
Integumen is pleased to announce that the Board of Integumen will provide a live investor presentation via the Investor Meet Company at midday today to enable shareholders to ask questions in the same way as they would at a normally held annual general meeting. Shareholders can register on the attached weblink:

https://www.investormeetcompany.com/integumen-plc/register-investor

Gerry Brandon, CEO of Integumen, commented:

"Collaboration and cooperation are key to solving major societal problems like COVID-19. Together our collaboration brings extensive scientific expertise in each of our fields and the results of this strategy can be seen by our ability to rapidly bring effective solutions in the fight against this global pandemic. Integumen has reached a point of Minimum Viable Product/Service using Affimers and Aptamers that bind to the nano-photonic chips and detect the protein spike of SARS-CoV-2 in filtered wastewater and in the breathalyser, and we are confident that Microtox PD and Microtox BT are now ready for live virus testing.

"The Company believes that to enable the economy to re-open fully, the public are going to have to take the responsibility of testing against this virus, themselves. By providing an instant real-time breath test with a digital reader platform, and combined with appropriately priced products, we can drive a consumer-led duty of care for personal COVID-19 responsibility. The current infrastructure for testing of this virus is groaning under the pressure and we believe that whilst PCR and Antigen tests are crucial to the diagnosis of coronavirus, we believe that Microtox BT and the Digital Health Pass will enable businesses and the public themselves to triage those with infections, creating safer environments with the potential to limit self-isolation to only those that need to. This pandemic has changed our lives for the foreseeable future and together we can find ways to create a new normality."

Dr Alastair Smith, CEO of Avacta Group plc commented:
"Affimer reagents are ideal for applications such as this, not only because of their sensitivity and specificity, but also because of their robustness which is essential when being deployed in real-world real-time situation analysis.
I look forward to seeing the results of the planned evaluations of the Affimer-based wastewater and breath analysis systems in due course."

Dr Arron Tolly, CEO of Aptamer Group Ltd. commented:
"*We are delighted to be moving towards the commercial stage with Aptamers embedded in multiple systems that capture the SARS-CoV-2 virus into real-time detection solutions, both in wastewater and the handheld breath test. The use of our specific and sensitive Aptamers to SARS-CoV-2 in these assays offers the simple and rapid diagnostics needed to help fight the COVID-19 pandemic. As production of our Aptamers can be rapidly scaled in a highly cost-effective manner, we can easily meet the required global testing needs across both of the Microtox platforms with this technology.*

Particularly with the continued effects of this pandemic on the global health and economy there is a vital need for these assays to allow the economy to open further while maintaining the health and safety of populations. We are glad to be able to play a role in the prevention of the spread of this disease."

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The information communicated in this announcement is inside information for the purposes of Article 7 of EU Regulation 596/2014.

About Integumen plc (www.integumen.com)

Integumen is a scientific research and AI-as-a-service company focused on production and analysis of bacteria, virus and toxins utilising artificial intelligent data analytics in regulatory technology, from scientifically proving the impact of skincare product claims on skin microbiome for top 10 global cosmetic company clients to remotely detecting water contamination in real-time. Integumen has recently announced the Company's change of name to Deepverge plc.

About Modern Water (www.modernwater.com)

Modern Water was established in 2006 to develop and commercialise water recovery technologies to counter water crisis problems arising from climate change and a growing global population. Having invested £20m over the last 14 years, the results comprise a robust patent portfolio of cutting-edge technology, focused on monitoring of contaminated water and decontamination of wastewater, making recycling of water more efficient. Six countries across the world have legislated that Modern Water monitoring test systems are written into their environmental protection legislation. On 28 August 2020, Integumen announced that terms have been agreed to acquire Modern Water in a recommended all share offer.

About Aptamer Group (www.aptamergroup.co.uk)
Aptamer Group Ltd. is a world-leading provider of bespoke nucleic acid aptamer selection and development services. They have utilised our many years of experience, cutting edge approach and liquid handling platforms, to deliver aptamer based solutions for a wide variety of needs with pharmaceutical, biotechnology and diagnostic customers; as well as academic and research institutions across the globe.

What is an Aptamer?
Aptamers are synthetic molecules specifically created to bind to another (usually larger) molecule with a very high attraction to a given target. These short nucleic acid sequences (DNA or RNA), wrap around all or part of their target (in the case of small molecules) or fit snugly into clefts and gaps within the surface of much larger target molecules (for proteins, cells, tissues etc). This ability to fold into or around the complex surfaces of a target, means that it is possible to select aptamers against almost any given target, with exquisite precision.

About Avacta Group plc (www.avacta.com)

Avacta is developing novel cancer immunotherapies combining its two proprietary platforms - Affimer® biotherapeutics and pre|CISION™ tumour targeted chemotherapy. With this approach, Avacta aims to address the lack of a durable response to current immunotherapies experienced by most patients. Avacta's therapeutics development activities are based in Cambridge, UK.

Avacta benefits from near-term revenues generated from Affimer reagents for diagnostics, bioprocessing and research, through a separate business unit based in Wetherby, UK.

The Affimer platform is an alternative to antibodies derived from a small human protein. Despite their shortcomings, antibodies currently dominate markets worth in excess of $100bn. Affimer technology has been designed to address many of these negative performance issues, principally: the time taken, and the reliance on an animal's immune response, to generate new antibodies; poor specificity in many cases; large size and cost.

Avacta's pre|CISION targeted chemotherapy platform, releases active chemotherapy only in the tumour, thereby limiting systemic exposure and damage to healthy tissues, and thereby improving the overall safety and therapeutic potential of these powerful anti-cancer treatments.

By combining these two platforms Avacta is building a wholly owned pipeline of novel cancer therapies with the aim of creating effective treatments for all cancer patients including those who do not respond to existing immunotherapies. Avacta expects to take its first drug, a pre|CISION targeted form of the standard-of-care Doxorubicin, into the clinic later in 2020 or early 2021.

Avacta has established drug development partnerships with pharma and biotech, including with Moderna Therapeutics Inc., a deal with LG Chem worth up to $310m, a partnership with ADC Therapeutics to develop Affimer drug conjugates and has established a joint venture in South Korea with Daewoong Pharmaceutical focused on cell and gene therapies incorporating Affimer immune-modulators. Avacta actively seeks to license its proprietary platforms in a range of therapeutic areas.

Avacta diagnostics business unit works with partners world-wide to develop Affimers for evaluation by those third parties with the objective of establishing royalty bearing license deals. Avacta is also developing a small in-house pipeline of Affimer-based diagnostic assays for licensing. (Source : Avacta plc)

1. https://apps.who.int/iris/rest/bitstreams/1275547/retrieve

[i] Reverse transcription polymerase chain reaction is a laboratory technique combining reverse transcription of RNA into DNA and amplification of specific DNA targets using polymerase chain reaction. It is primarily used to measure the amount of a specific RNA

[ii] https://support.ce-check.eu/hc/en-us/articles/360008712879-Classification-Of-Medical-Devices-And-Their-Routes-To-CE-Marking