News story: Scientists move away from the keyboard to beat cyber attackers at their own game

Scientists at the Defence Science and Technology Laboratory (Dstl) have developed a cyber card game which helps staff identify and learn about some of the key open source techniques a cyber aggressor might use to gain insight, access and control over industrial and commercial infrastructures.

Extensive testing of the game and positive stakeholder feedback has shown a very rapid initial learning curve compared to conventional training alone and this contributed to the game winning the 2018 Dstl 'Innovator of the Year' award.

The UK government and commercial sectors face a growing challenge in the form of cyber-attacks and information warfare from criminals and state actors. Such attacks take various forms and are often very sophisticated, meaning they may go unnoticed. Training staff to recognise and counter common information warfare attack strategies can be difficult, time-consuming and expensive

The key benefits of Dstl's cyber card game are that it:

- Provides a rapid upskilling in understanding high level, open-source cyber-attack techniques and enhances learning on possible defensive strategies
- Offers a more enjoyable approach to cyber training – staff have the option to continue playing in their own time
- Is adaptable across a range of audiences and knowledge levels- the game can be tailored to various scenarios, ranging from a rapid two hour session for corporate management through to an extended campaign for cyber professionals
- Avoids using classified information, and therefore does not need security clearance to play

The cyber card game is available for license on a non-exclusive basis through Dstl's Easy Access IP (EAIP) licencing framework. The EAIP framework allows companies to develop Dstl's work at no cost, facilitating commercialisation of products that will benefit the economy and society.

Dstl has signed their first cyber card game licencing agreement with Coruscant Productions LLC who plan to develop and market the cyber card game training approach further.

The lead scientist who developed the game at Dstl said:

> It is exciting to see the cyber card game being developed externally for the benefit of both security and commercial

> environments.

Tomas Owen, founder of Coruscant Productions added:

> We are delighted to have the opportunity to license such unique intellectual property from Dstl. The cyber card game fundamentally alters the way cyber is thought about, taught and employed.
>
> We're proud to be chosen as the first licensee, and look forward to working with cyber training providers across the world with the goal of ensuring all organisations are better able to understand and defend against cyber criminals and digital attacks.

For more information, visit Dstl's Easy Access IP page

News story: Keeping wildlife out of illegal trade

Elephants and rhinos have roamed the earth for millions of years. Yet, through a mix of human greed, ignorance and indifference they, along with many other species, could be lost in the wild within our lifetime. It does not need to be that way. The London Conference on Illegal Wildlife Trade in October gathers leaders from across every sector to bring the surge in illegal trade to an end.

Corals, elephants, rhinos, rosewood, parrots and pangolins share something in common. They are amongst the 7,000 species of wild animals and plants being illegally traded according to the United Nations, fuelling a USD20 billion-dollar a year illicit market that is driving some of our most cherished species to extinction.

Conservation gains of the past decades are being unravelled, as is the case with the rhino in Africa. Illegal killing was well under control up until 2006 when around 60 animals were poached across the African continent. Since that time, we have seen levels of poaching skyrocket, with up to four rhinos now being killed every day for their horn to feed distant illicit markets.

Over the same period, we have seen a surge in illegal killing of the African elephant and trade in their ivory. With an estimated 100,000 elephants slaughtered for their ivory between 2010-2012, and high levels of killing continuing, some elephant populations are at imminent risk of extinction.

Collective international efforts to stop this surge have yielded some successes. Since reaching a peak in 2011, overall rates of elephant poaching

across Africa fell for six consecutive years. Stronger laws and better enforcement saw poaching levels in Eastern Africa fall back to pre-2008 levels, but this is not reflected in other places, where poaching levels remain rampant.

Yet, it is perhaps the lesser known species, like the pangolin, the most heavily trafficked mammal on the planet, and rosewood, the most illegally traded timber by value, that are suffering the most and in need of greater attention, especially in consumer countries.

This surge in illegal trade is driven by transnational organised criminals who relentlessly target high-value wildlife without regard for animals or people's lives. In their wake they leave injured and killed rangers, corrupted officials, impoverished communities, and depleted landscapes. Nowhere is outside of their deadly reach. By exploiting modern technology and open transport routes they plunder and transport wildlife to the four corners of the earth.

How we respond to this crisis reflects how we value our wildlife, the people who derive their livelihoods from it, and the kind of relationship we want to build with the natural environment we all depend upon.

The international community is fighting back, and a concerted global effort is underway to take on these criminals right across the illegal supply chain. Deploying the same tools and techniques used to combat other serious crimes, from human trafficking to the illicit arms trade, will make these wildlife crimes riskier and less profitable.

Over the past five years, the first ever resolutions of the United Nations, successive decisions taken by CITES, the global convention that regulates wildlife trade, amongst others, have seen cross border collaboration reach an all-time high.

However, governments and multilateral bodies cannot do it alone. Civil society has played a critical role. The private sector, especially finance, technology, transport, travel and tourism, is now coming on board, and deepening its engagement is a priority of the London Conference.

HRH the Duke of Cambridge led an initiative through his Transport Task Force that has seen airlines, courier and shipping companies take actions to educate customers and staff, and to disrupt the illegal supply chain at every point along the way.

The travel and tourism sector has recognised the role that wildlife-based tourism plays in fighting wildlife crime, including through generating a direct incentive for local people to protect wild places, especially through providing decent local jobs.

This is vital, as unlike some other transnational crimes, the damage is done at the source, in the wild. Once an animal or plant enters illegal trade the local community and ecosystem have suffered. Impoverished people are vulnerable to turn to poaching to feed their families yet providing them with

alternative livelihoods can turn poacher to gatekeeper and lift entire communities out of poverty. And that's why we must put greater emphasis on protecting wildlife at its source.

When deployed well, technology can be a game changer in tackling illegal wildlife trade. Modern forensics is snaring wildlife smugglers and their buyers, and some major e-commerce sites like Alibaba and eBay are taking a stand against the misuse of their sites to sell illegally sourced products as part of a Global Coalition.

New surveillance and tracking technology are enabling rangers to pinpoint the location of animals and people and detect intrusions in real time, giving them an upper hand against poachers. When combined with community engagement, this deters would-be poachers, as has been shown in Garamba in the DRC and the Northern Rangelands Trust in Kenya.

When places are secure for people and wildlife we can stop poaching, recover species and restore landscapes, as we have seen in parks stretching from Chad to Nepal to Rwanda. In Majete in Malawi there have been zero losses of high-value wildlife to poaching for the last 15 years. This is what's possible with strong political will, effective on-the-ground management and adequate resourcing.

With the right conditions these successes can be sustained and replicated at scale.

In doing so, we are not just stopping wildlife from entering illegal trade, we are supporting development through conservation and enabling communities to better manage other emerging threats to wildlife and their livelihoods. As such, they warrant increasing support by development aid agencies.

Tackling the demand, often coming from distant shores, is critical for taking the pressure off front-line rangers.

China took a bold step when it closed its legal domestic markets for elephant ivory in 2017. The UK will close its markets in 2018, as will others, to hinder laundering of illegally sourced ivory, known as the 'grey market'. It won't stop all illegal trade, but it will close off one route.

We are seeing some signs of a turnaround, but these gains are fragile. Success requires us to bring new players to the table and fully capture the global momentum of recent years.

When we come together in London next month we can help turn around the disturbing trends of the past decade, and in doing so ensure our children do not talk of elephants, rhinos, lions, tigers, sharks or rays in the same way as we talk of dinosaurs and the Dodo.

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Notice: SO45 1TX, Esso Petroleum Company Limited, EPR/BR6996IC/V007: environmental permit issued

The Environment Agency publish permits that they issue under the Industrial Emissions Directive (IED).

This decision includes the permit and decision document for:

- Operator name: Esso Petroleum Company Limited
- Installation name: Esso Refinery
- Permit number: EPR/BR6996IC/V007

News story: NHS to partner with Commonwealth nations to stop superbugs

The new Commonwealth Partnerships for Antimicrobial Stewardship (AMS) scheme is funded by the UK Department of Health and Social Care's Fleming Fund.

The scheme will send up to 12 volunteer NHS pharmacists and specialist nurses to Ghana, Tanzania, Uganda and Zambia to work with local health workers against AMR.

It will see NHS and national teams work together to help to keep antibiotics working better for longer and stop the emergence of superbugs. They will do this by:

- improving the detection and monitoring of resistant infections at hospital level
- taking measures to reduce infection
- putting steps in place to use antibiotics effectively

It will be delivered in collaboration with the Commonwealth Pharmacists Association (CPA) and the Tropical Health Education Trust (THET), an international NGO with expertise in delivering global health partnerships.

AMR occurs when micro-organisms survive exposure to a medicine that would normally kill them, such as antibiotics, antimalarials and antivirals. These micro-organisms are often referred to as 'superbugs'.

The independent review on antimicrobial resistance estimated that at least 700,000 deaths globally each year are from drug-resistant infections such as bacterial infections, malaria and HIV/AIDS.

The review also estimated that deaths from AMR could increase to 10 million each year by 2050 and cost the global economy up to $100 trillion US dollars.

It is thought that 5,000 deaths are already caused every year in the UK alone by antibiotics no longer working for some infections. If we do not find a solution, everyday procedures such as caesarean sections, cancer therapy, and hip replacements will become extremely dangerous.

Chief Medical Officer for England, Professor Dame Sally Davies, said:

> I am delighted that UK aid – provided through the government's Fleming Fund – will enable these vital partnerships between our fantastic NHS staff and their counterparts overseas to take place.
>
> AMR poses a risk to us all, wherever we call home – collaboration of this kind with our friends and neighbours internationally will be all the more important if we are to tackle this challenge together.

This scheme will play a crucial role in allowing specialists to share expertise and strengthen approaches to antimicrobial stewardship in hospitals both at home and abroad.