

Ethical intelligence

Philip Mason talks to the Defence and Security Accelerator and Trilateral Research about the development of 'ethical AI' to help combat organised crime

As no-one will need reminding, the past few years have seen the world becoming an increasingly complicated – not to say dangerous – place.

While not necessarily 'security' related, for instance, the COVID-19 pandemic has changed the societal landscape immeasurably from what we knew prior to March of 2020. At the same time, the UK also finds itself in the midst of an increasingly acute cost-of-living crisis, coupled with almost unprecedented recent instability in Westminster.

Perhaps the most potentially 'destabilising' events, however, are those which are happening on the world stage, not least the ongoing fallout from the Russian invasion of Ukraine at the beginning of this year. This does have potentially massive implications from a public safety perspective, for instance in the realm of cyber security. Likewise, the worsening climate crisis, the effects of which all but shut down the United Kingdom for two days in the middle of the summer.

Key to the protection of the UK and its people during all this chaos is the intelligent development and use of communications technology, whether in the cybersecurity realm, helping firefighters to manage incidents in real time, and so on. And a key player when it comes to bringing new technology through on behalf of the UK government is the Defence and Security Accelerator, otherwise known as DASA.

Outreach and engagement

Established in 2016, DASA describes its role via its website as "finding and funding exploitable innovation to support UK defence and security quickly and effectively, and support UK prosperity.

"Our vision is for the UK to have strategic advantage through the most innovative defence and security capabilities in the world. We achieve this by welcoming ideas from innovators small and large, providing support to those who have not previously worked with government."

Going into greater detail about the history of the organisation and the work it carries out, its security lead, Ellie Rice, says: "We're a fairly new part of government, set up just five years ago. That was prompted by the pace of technological innovation in the private sector, recognising that it's essential that UK government and emergency services are able to harness the very best innovation to keep pace with threats to our communities."

She continues: "Fundamentally, our task is to reach out and engage with suppliers who have got good ideas, with the aim of developing them and eventually pulling them through for use. Liaising with those suppliers also gives us an insight into where those emerging technologies could potentially pose a threat to the UK.

"We play quite an important role. That's in terms of both

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understanding the potential for impact of technologies and developing good ideas for use on the frontline.”

According to Rice, there are several methods through which this supplier liaison takes place, which we'll cover later in the article. Prior to this, however, DASA has to know what is actually required by its different partners in government. It gathers this information – intuitively enough – by asking them, and increasingly through embedding staff within government itself.

Rice continues: “In the first instance, we scope out whatever technology might be required, in partnership with other government departments. That could be the Ministry of Defence, the Home Office or the Department for Transport, all of which have got their own plans and programmes and will have identified particular areas of need.

“Once we have framed the problem or challenge area, we can run a themed competition. Each government department will have their own pot of funding. DASA can engage with the supply base on their [government's] behalf, supporting the assessment and funding decision, as well as providing a range of services to the funded suppliers.”

As well as the aforementioned themed competitions, DASA also runs what it refers to as the Open Call, which offers the opportunity for any manufacturer to submit an idea or a concept relevant to defence and/or security. Further liaison with the private sector and academia also takes place via DASA's outreach team.

According to Rice, the latter are civil servants based across the UK's economic regions whose task is to reach out to innovators, local economic partnerships and other forums, as well as engaging with universities. This work involves doing “an awful lot of one-to-ones”, offering both engagement and support.

One of the key advantages of this is being able to reach what Rice calls the “non-traditional supply base”, or in other words, those who have never previously considered working with the emergency services, defence or security. The more traditional supply base, meanwhile, is reached via the DASA's relationship with organisations such as BAPCO.

Deliverable at scale

Prior to an innovator being chosen to receive funding



through DASA, there are several criteria against which its proposed concept is measured.

The first of these, quite understandably, is the desirability of the project, or to put it another way, is it actually useful? (In Rice's words: “We're not here to do science for science's sake.”)

The next criterion is the feasibility of a product when it comes to actually existing in the real world, as opposed to the developer attempting to break the laws of physics. Third is viability, specifically regarding the level of funding which is being asked for, and also whether the product will ultimately be deliverable at scale. Finally, there are the legal, commercial and ethical considerations.

Over the course of its existence, DASA has funded a variety of different projects, including technology to improve crowd resilience, in direct response to the multiple terror attacks which took place in 2017. It has also carried out work looking at the chemical make-up of household products in order to reduce the potential for creating home-made explosives.

One of its current partnerships is with 'ethical artificial intelligence' specialist Trilateral Research, providing funding to something called Project IRON (Intelligent Reporting of Organised Networks). This is described by the company as “exploring the application of various data science, machine learning, natural language processing and graph analytics techniques to combat organised crime and child exploitation and to enable early intervention”.

Discussing Trilateral's background as a company, its ethics innovation manager, Zachary Goldberg, says: “Trilateral Research was founded in 2004. We focus on developing ethical, data-driven solutions for complex societal needs. Ethical AI is really the driving principle of what we do.”

For anyone requiring clarification as to what ethical AI might mean as a concept, perhaps the easiest way to explain it is in comparison to non- or even unethical AI. Describing the latter, Goldberg defines it as AI which creates a negative impact on individuals, democratic society and groups who are trying to

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promote those values.

He offers an example of this in the form of a company who developed AI as part of its hiring process, which turned out to be prejudiced against female applicants. The reason for this, according to him, was that the company had 'trained' the AI to follow previous hiring practices, which were subsequently realised to be unjust.

"If society has certain inherent structural injustices," he says, "then the AI simply learns to repeat those injustices and subsequently entrenches them. In the US, for example, AI has been used to predict recidivism in the US, trained, in some cases, on biased data sets.


"We take that very seriously, to ensure that we're not perpetuating anything unethical or unjust. We only take on projects where we feel that the outcome would have a significant positive ethical impact on society."

While unable to go into detail about Project IRON due to reasons of confidentiality, Goldberg reveals that the initiative – which he calls a "research innovation project" – is being carried out in collaboration with a UK police force. The aim, at least in the first instance, is to "help the police recognise groups of offenders who are working together. We want to help with enhanced identification of risk, within and between networks of organised crime groups."

Elaborating on this, Goldberg's colleague, senior data scientist Anita Nandi, says: "One thing that we've identified is that the police have good capabilities when it comes to reacting to intelligence in what you might call a 'manual' way. What they don't necessarily have is the ability to see the data as a whole, to discern patterns and identify potential organised crime which might be taking place.

"Project IRON is very much a research tool, so it'll be focused primarily on methodology and whatever insights can be provided. Beyond that, from the operational perspective, the idea would be to develop a tool for the police to use live data, providing suggestions for areas of further investigation. We want to feed into their existing processes and augment them, rather than coming in and changing everything."

According to Goldberg, the DASA funding for Project IRON came through the Open Call, as mentioned above. This followed on from a previous project known as Solebay, which focused on risk assessment in relation to human trafficking. (For those who don't know, HMS Solebay was a Royal Navy ship deployed to help end the Trans-Atlantic slave trade at the end of the 18th century).

DASA is a key organisation in the UK authorities' ongoing effort to fight crime, both at home and abroad. Its work with Trilateral Research is a great example of the value that it brings. 

**DASA works closely with departments
within government**

