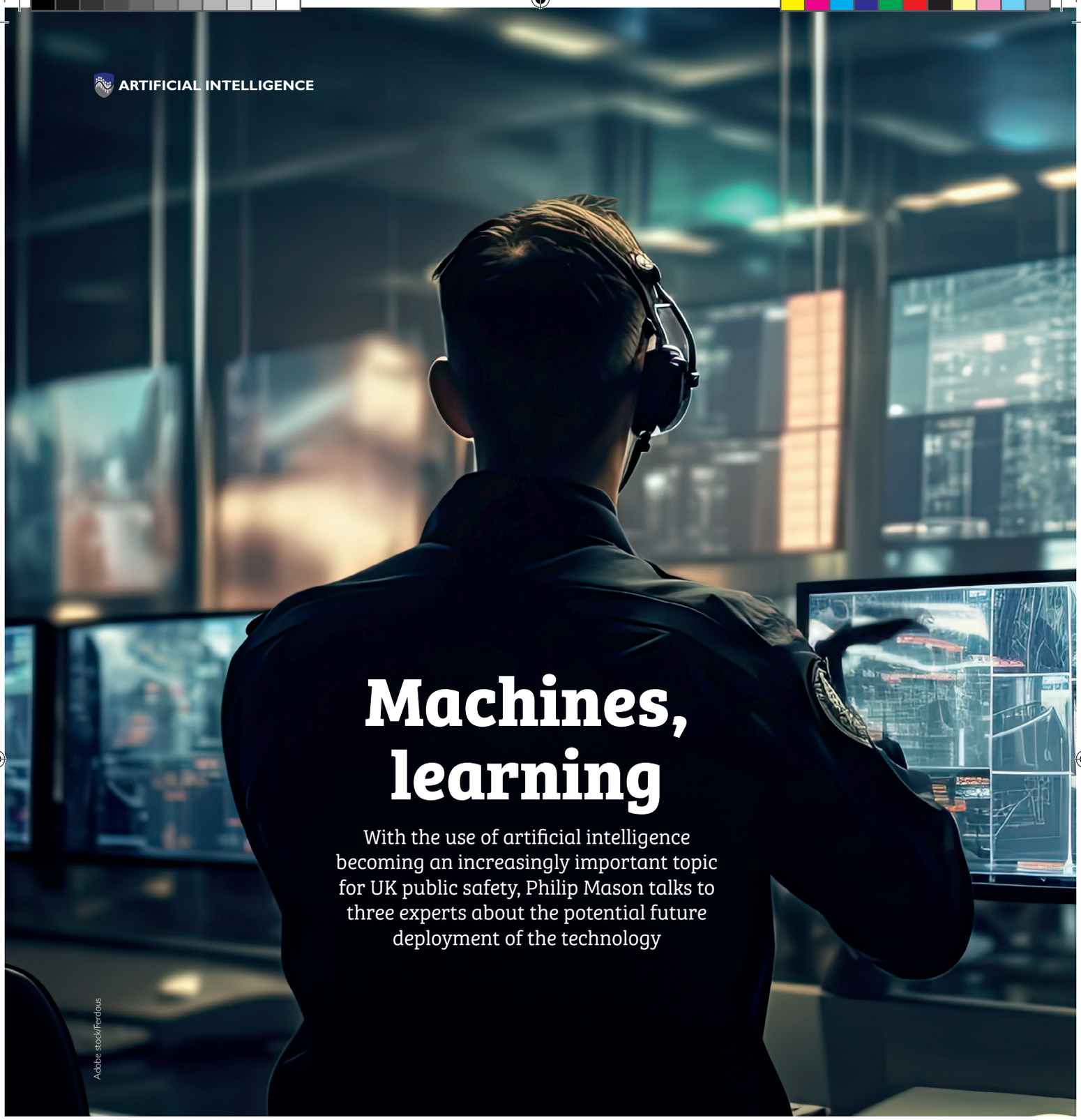

Machines, learning

With the use of artificial intelligence becoming an increasingly important topic for UK public safety, Philip Mason talks to three experts about the potential future deployment of the technology

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Alongside the ongoing move from TETRA to mission-critical broadband, arguably the hottest current topic for our sector is the ways in which artificial intelligence (AI) might be used by public safety.

This was apparent at this year's BAPCO Conference and Exhibition, which included a variety of presentations on the topic, some of which were positioned as keynotes.

At the same time, other major European public safety communications organisations are likewise focussing on AI. For instance, EENA is embarking on its own project looking at potential use in the control room.

In this article we are going to be focusing on two potential use-cases, one related to what might be termed as 'response', with the other more concerned with the incident/training planning process. Both hold enormous promise, and as such could become integral to public safety operations going forward.

But we are not there yet. And – as with the more general discussions about the technology taking place across society – there are still vital questions to be answered.

Human in the loop

EENA – or the European Emergency Number Association – announced its 'AI special project' earlier this year. It described the aim of the initiative in the following way: "The objective is to explore the use of AI tools in PSAPs [public safety answering points] and demonstrate their impact, publish recommendations and lessons learned, [and] ensure compliance with EU law, in particular the draft AI Act."

"The project," the organisation continued, "aims to show how AI tools can be effectively implemented into PSAPs and how they can contribute to increased efficiency. And, as a result, a better emergency service for citizens across Europe."

EENA has set out to achieve this through the launch of nine pilot programmes, involving a variety of emergency services organisations from across the continent, alongside AI developers themselves.

Benoit Vivier is EENA public affairs director. Discussing the initiative, he says: "The project began with us surveying our members, which included solutions providers and emergency services, which were mainly PSAPs situated in Europe. We asked them where they think the biggest added value lays when it comes to the use of ➥

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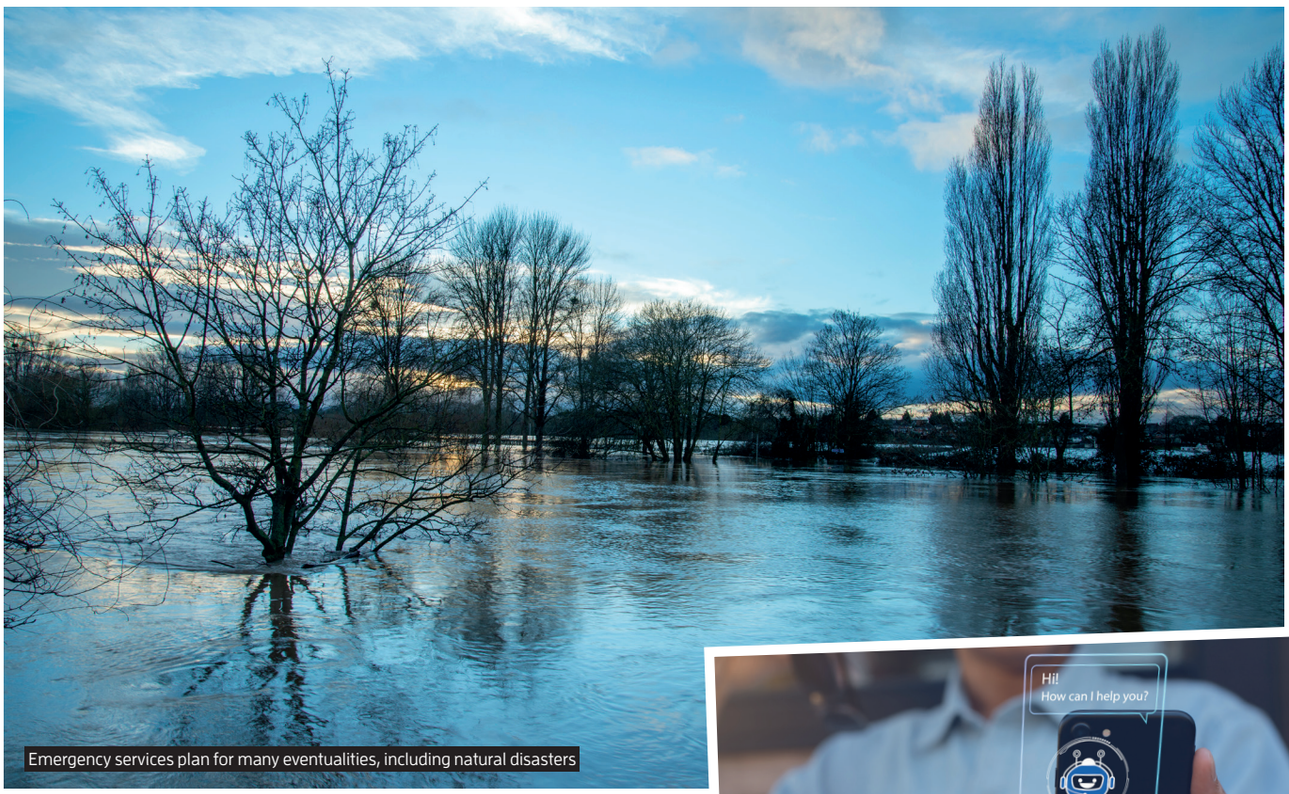
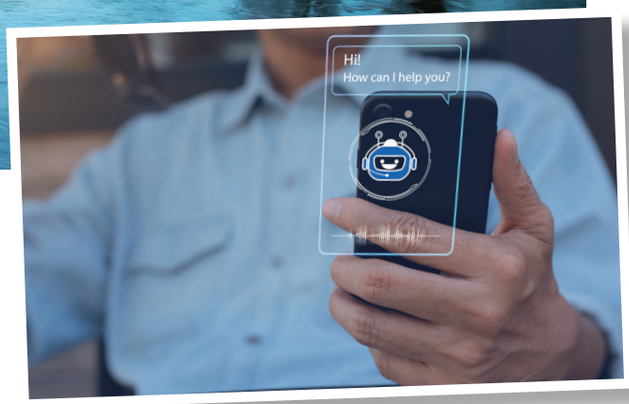


Emergency services plan for many eventualities, including natural disasters



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artificial intelligence."

According to Vivier, there were a variety of potential use-cases identified in relation to call-taking, including help with triage, vehicle routing, the monitoring of social media, as well as the use of chatbots in non-urgent situations.

The largest number of responses, however, identified the most urgent need as being around language detection and translation. "This is an issue which has always needed to be addressed," he says. "Now, there would appear to be a solution."

This has subsequently been reflected in the pilots themselves, with many of the companies taking part – such as LiveReader – heavily involved in the development of language detection/translation AI. (Indeed, the latter describes its Alternis solution as the equivalent of the Babelfish from The Hitchhiker's Guide to the Galaxy, but rather than putting it in your ear, you integrate it with your IT).

Other companies involved in the pilots include Gladia, Cestel and Augmented Hearing, each of which is working with a PSAP (or a variety of PSAPs) in order to fulfil the aims of the project.

Given the nature of artificial intelligence as a technology, it is probably no surprise that there remain any number of questions – both ethical and philosophical – attached to its use. Add to this the way it continues to exist in the public imagination as much a potential threat as anything else, and debates are likely to remain complex for some time to come.

Naturally, this is something that we are also seeing reflected in the 'public safety' discussion, a sector which is understandably slow to adopt 'unproven' technology at the best of times. Broadly speaking, these discussions take in the efficacy of the technology itself, alongside – perhaps more interestingly – the continuing role of 'the human' once it is rolled out and bedded in.

Discussing this in the context of emergency services call-taking, Vivier continues: "If we take something like chatbots [carrying out triage], from what I can gather, there's mixed feelings around it.

"When it comes to something like medical detection, there's different opinions about how they can help doctors. The added value is less obvious than, again, something like language detection."

This point leads neatly on to 'the human in the loop', a concept which has already (rightly) become something akin to an article of faith regarding the use of AI for public safety. Continuing on the topic of chatbots, Vivier illustrates this by discussing the need to "keep control of the AI".

"If the answer given is not satisfactory," he says, "the human can take control back. Or the user can speak to the human. This is important." ➥

Also important for Vivier is the operational context in which the technology is deployed.

For instance, artificial intelligence's use during an emergency involving mental health would be limited due to its inherent lack of emotional understanding.

He continues: "I think that empathy is one of the few things that distinguishes us from the machines, and for some emergencies, that's exactly what you need. I believe that mental health is an area where AI really wouldn't help, and one of the reasons why it's already quite controversial.

"One of the jobs of call-takers is to calm down the person on the other end of the line who might be very panicked or upset. A chatbot probably won't be able to do that."

Information overload

As mentioned, EENA's AI project involves a variety of emergency services organisations, alongside four solutions developers. Another company which is also involved in the AI piece, meanwhile, both in the UK and abroad, is contact centre and cloud-based communications specialist Avaya.

Having staged an AI-focused event in London last December, the company described its experience of the market and customer expectation in this way: "Our UK and Ireland customers are demonstrating the immense potential for customer-specific and industry-optimised AI solutions.

"Organisations recognise the fundamental importance of delivering frictionless experiences to customers. They aim to harness a seamless stack of UC [unified communications], CX [customer experience], and AI applications, focussing on deploying analytical tools at scale and reducing the time it takes to introduce self-service applications."

Discussing its work with UK emergency services in particular, the company's enterprise account manager, central government and public safety, Steve Duncan, says: "The teams and personnel that we regularly engage with have typically been assessing the capability of AI solutions for some time."

Echoing Vivier's sentiments, he adds: "They have been carefully considering the benefits, and how implementation must take account of the specific circumstances of their operations. Currently we have not reached a state where a fully automated service is expected to handle a 999 call end-to-end.

"However, there are many requirements and challenges where AI technologies can have immediate and measurable impact on non-emergency services like 111 and 101."

With that in mind, one of the key uses being discussed, at least according to Duncan, are the ways in which artificial intelligence might be leveraged to mitigate call centre demand. This is – naturally – in terms of both increased demand itself, but also the ever-increasing volume of information which call-handlers will likely have to deal with as we move further into the 'NG999' era.

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Discussing the former in particular, Duncan says: "Our customers need to handle an ever-increasing volume of emergency and non-emergency calls, without the equivalent increase in resources to support this demand.

"AI-driven solutions are being investigated to alleviate this demand. Automation of routine tasks, provision of self-service solutions and increase in cadence of updates to citizens are commonly highlighted areas."

Returning to the topic of how AI-related capability is being incorporated into the company's products here and now, meanwhile, Duncan gives the example of "AI enhancements" being used to "predictively route the interaction to the best team or agent".

Also, to "equip the agent with customised information on the caller, summarise the interaction effectively on completion" and to "trigger automated actions after handling".

Cognitive function

So far, we have primarily concentrated on artificial intelligence ('generative' and otherwise) being leveraged to either facilitate interactions with the public, aid workflow or both. There is another use case in relation to the technology, however, which could also conceivably bring a whole new element to the emergency services strategy and planning piece.

Defining 'generative AI' in greater detail, these solutions were described by IBM in a 2023 research article as "[referring] to deep-learning models that can generate high-quality text, images and other content based on the data they were trained on".

The most famous example of this is OpenAI's ChatGPT platform, which is currently being put to work drafting everything from business correspondence to university essays.

According to Duncan, this is a kind of technology containing "revolutionary capabilities", the potential of which Avaya is also exploring with its clients. "It is currently inappropriate," he says, "to allow a generative AI capability to handle the customer interaction, as accuracy and comprehension are paramount.

"However, similar 'generative' capabilities are used to save the agent minutes of call wrap-up time, with automated transcription and summarisation."

Keri K Stephens is a professor in organisational communication technology, based out of the University of Texas in Austin. One of her areas of interest is the use of communications tech by public safety, as well as messaging taking place around disasters, as evidenced by her work on the use of social media during Hurricane Harvey in 2017.

Needless to say, one current focus of her work is the use of artificial intelligence in the field.

Going back to the continuing role of the human being, she says: "I'm very pleased that all the discussions at BAPCO 2024 insisted that humans have to be in the loop.

"In an emergency services or health context, you can't get rid of the idea of the human. The stakes are too high."

She continues: "The times when things go awry is when people are not aware that AI is operating in their workflow. When they are aware – and aware that the human needs to make decisions – I feel that it might be the most ethical type of approach possible. But that requires training and continual awareness."

According to Stephens, she began her work in this field nearly a decade ago when she started looking at machine learning in relation to the use of social media. (Or, as she puts it, "How can we mine social media in a productive way, where it could provide situational awareness for emergency responders.")

She describes this in more detail as the process of trying to train machines using human coders, labelling the data so that 'the machine' can learn from it. "AI is really not like human intelligence," she continues. "It's a series of probabilities and mathematical calculations.

"It's not decision-making. It's not cognitive function in the same way that humans possess cognitive function."

Discussing generative AI, meanwhile, Stephens says she sees immense potential when it comes to public safety. Despite being less than impressed when her students lean on it to help write their essays, she does believe it could be useful when it comes to the emergency services planning piece.

She says: "I think things like ChatGPT are great for idea generation, because [in that context] I'm not looking for the 'right' answer. That being the case, it can provide you with the start of a safety protocol, say, around 70 per cent.

"At the same time, an expert is then going to have to go in and fill in that other 30 per cent. It will have provided the ideas, but in the end, the human is going to have to go in, evaluate the accuracy and write it."

The future use of artificial intelligence by the public safety community is a truly compelling subject which is only going to get more important as we move forward.

And if our interviewees featured in this article are correct, we are only at the start of a very long journey.