Adobe stock/Siarhei

Computer world

The BAPCO Journal reports from the recent British APCO roundtable event focusing on the use of artificial intelligence in public safety

Over the past few years, British APCO has run a series of highly successful roundtable events, addressing some of the biggest topics for the UK public safety communications sector. These have included NG 999 and MAIT, as well as the latest session – which took place towards the end of September – focusing on artificial intelligence (AI).

The session began with an introduction to the topic, delivered by those who would be leading roundtable discussions later in the day. These included Actica Consulting's Aaron Page, as well as Reka Pecsi from Mason Advisory.

Pecsi began by providing a general definition of artificial intelligence and outlining several different use-cases. Giving examples of how the technology is already used in public safety across the globe, she said: "For example, in the US they are using a real-time gunshot detection solution in Chicago.

"Basically, they are combining statistical data and input from sensors to identify gunshots in order to speed up the resolution and resource allocation.

"Los Angeles Police Department is also using 'smart', 'predictive' policing solutions. They started this journey approximately 20 years ago, with automation, data analytics and data governance."

She went on to explain how in Los Angeles, predictive AI is being used in relation to stop and search. "It is supporting the assessment of the situation and also giving suggestions for police officers to manage the situation on-scene."

Moving to Europe, Pecsi also gave other examples of the technology being used in Paris, as well as by London Fire Brigade and the Met. The latter, she said, is using "smart AI technology" for surveillance.

She finished her presentation by reiterating that the technology was being used only to support decision-making on the part of officers, thereby immediately introducing the 'human in the loop' concept into the discussion. "AI will not overtake, at the moment, in any of the use-cases the decision-making potential and responsibility [of human beings]," she said.

With a variety of public safety use-cases established, Page continued the introduction by focusing on the way in which artificial intelligence might be implemented "into our processes, data flows ➥

and operational activities". He went on to discuss how "we can implement AI into some generic processes to initialise some of those considerations."

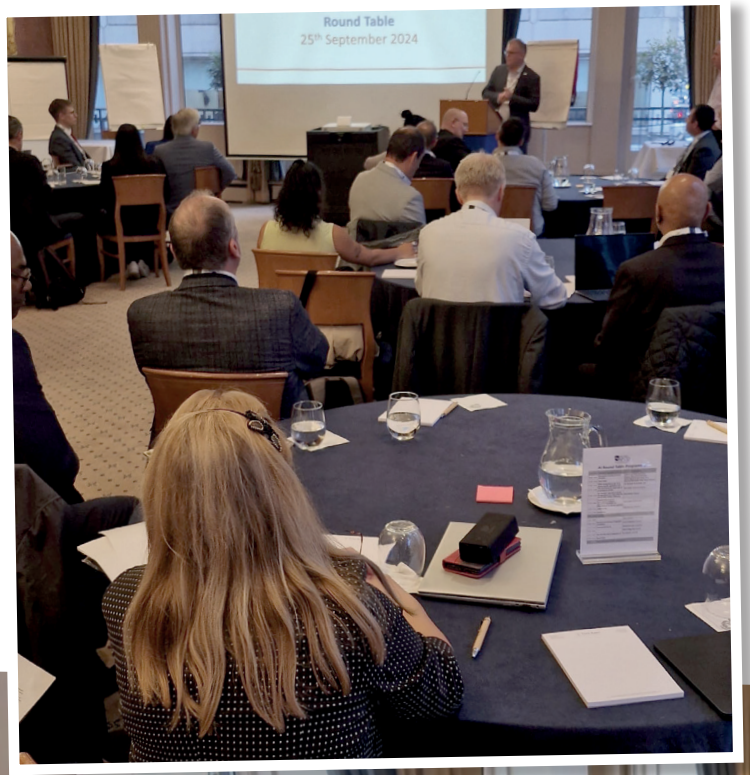
He said: "One of the first ways we can consider implementing AI is as a support tool, often referred to as AI collaboration or an AI assistant.

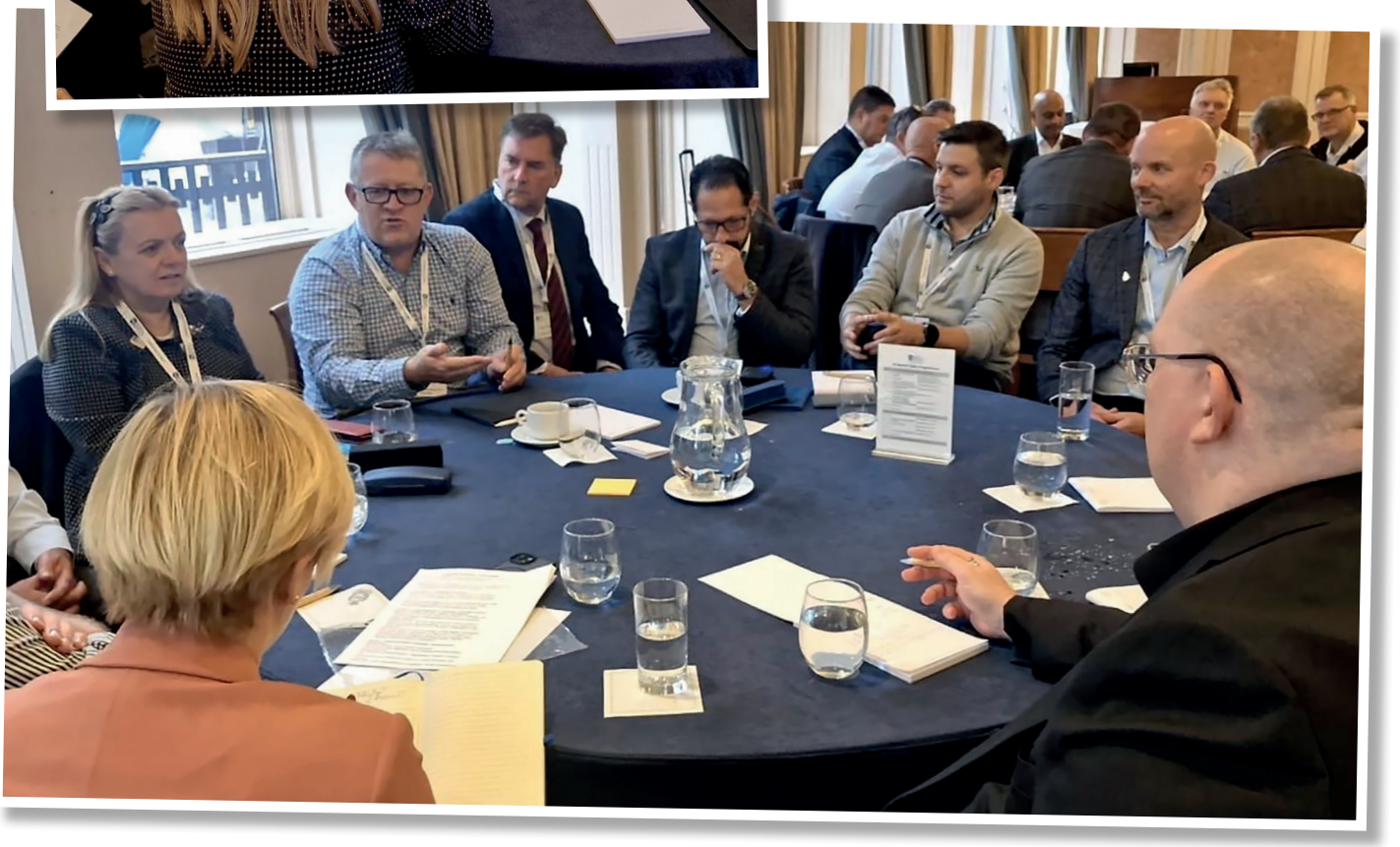
"[This might hold] initial prediction benefits, such as predicting wildfire movements based on weather pattern information in real time. Or perhaps in relation to data logging, with the AI automatically completing the forms at the operator's discretion."

Following the above 'scene setting', the next session was delivered by AWS. This essentially set the format for the rest of the day, with corporate stakeholders being given around 15 minutes each to explore different aspects of the tech. Both the morning and the afternoon sessions were finished by roundtable discussions involving attendees.

AWS's session focused on generative AI and its specific applications. It was delivered by Jon Black and Jon Hampson. The presentation began with observations about generative AI and machine learning adoption rates across a variety of sectors. Using Amazon Bedrock as an example, the presenters indicated that AI solutions are now widely rolled out to the point of being ubiquitous: "The point we're making is gen AI is not this futuristic, Star Trek-type technology any more. It is a widely adopted, widely used cross-vertical, cross-use case technology."

Having said that, however, Black went on to suggest that the public sector is somewhat behind the commercial sector in terms of adoption. "And even within that – for some very good reasons – public safety is even slower. But [AI] is here, and our ambition is to help public safety customers adopt this technology," he said. ➥





Following a general overview of the solution and its uses, the presentation touched a upon a key consideration when it comes to the use of artificial intelligence. That is, the quality of the data.

Black continued: "Even in the commercial sector, where companies have bigger budgets, the conversation 80 per cent of the time would devolve into 'Your data is wrong'. We can't use gen AI, because your data isn't in a position to do that.

"So, before we start thinking about this fancy stuff, we need to get our house in order. That's going to be the same in public safety."

Even more of a consideration, he said, is that a lot of the data in question won't be sitting in the cloud. "So, how do we manage that data on prem, with these customers, with these solutions.

"The first thing we need to tackle is getting that data in order. This is true whether you're Pfizer, NatWest or West Midlands Police."

Black finished by identifying "three major hurdles outside of the data piece" that need to be overcome in relation to public safety.

These included finding appropriate use-cases and actually deciding where to invest, alongside security, as well as what he referred to as cost and performance. "Particularly with expected budget cuts, how can you help public safety customers justify the investment in this technology, versus just keeping the lights on?"

"Even in the commercial sector, where companies have bigger budgets, the conversation 80 per cent of the time would devolve into 'Your data is wrong'"

Other sessions in the morning included Motorola Solutions discussing 'The requirement for explainable AI in emergency services'. Hexagon's Nick Chorley, meanwhile, talked about an 'assistive' approach to AI, while Content Guru's Nick Cooper presented on 'Implementing AI-driven transcription, auditing and assessment capabilities for recording and quality management'.

Discussing the potential deployment of AI in the control room, Chorley said: "The challenge we're here to talk about today is how do we reliably apply artificial intelligence to the public safety domain? We're talking about a real-time environment where every second counts, so you need to be very careful about how you apply AI to any high-impact decision-making."

From Hexagon's perspective, he continued, one of the key things which the company would want to achieve is to make operators' lives easier. He illustrated one of the ways in which he believes this could be achieved by pointing out the many different sources of information that control room staff are required to deal with on a daily basis.

"The volume of work that the operator is having to manage is increasing all the time," he said. "There's more and more information now. And the public – quite reasonably – say, if I can do this [contact the emergency services] online, why can't you suggest the most appropriate response to me as a user?"

Moving onto the 'automation versus artificial intelligence' dichotomy mentioned previously during the day, he stated that as a CAD manufacturer, his company had been automating processes for years. "For me, this is the nub of it all."

He continued: "Certainly in the last 20 or 30 years, the ability to receive information automatically, about the telephone call and its location, as well as automatic status and position updates… all of that has led to rich, real-time data that can drive automation.

"[In terms of AI], the great advantage of the CAD system is that it is producing good data. It's all well labelled, and we know where it's coming from. It's our own data and we created it ourselves, so there's no issue with it."

Heading towards the end of his presentation, he stated that his company sees AI essentially as an extension of the automation process referred to above.

He reiterated: "Why are we doing it? We're doing it to make things easier for the operator of the control room, and to get a more consistent level of service for the whole agency; to balance out those peaks and troughs you have between different levels of skilled operators."

The last presentation of the morning came from Prodaft, discussing cybersecurity. This would also be the focus of further sessions towards the end of the afternoon.

Ethics, bias, accountability

The afternoon session kicked off with a presentation from Inclutech's Jonathan Sinclair, who discussed his research into NG999, specifically in relation to the use of AI. The presentation centred in particular on public perception of the technology, in part based on a recent poll issued by Sinclair himself.

After delivering the results of the poll (which centred around use-case, ethics, bias, accountability and so on), he went on to deliver several quotes from AI experts working in academia. This was to enable the audience to reflect in particular on the topic of bias.

He said: "You may look at these quotes as negative and anti-AI. However, it's not necessarily true. What most of them are saying is that AI is us. It's society. It's what we make it.

"The data we provide and how we influence it is what AI is. It's just a computerised version of society's brains, all brought together."

The afternoon continued with Fournet's Luke Cuthbertson, who talked about 'Research around areas of digital/AI innovation'. He introduced the session by giving an overview of the company, as well as his role, focusing on the use of data in the customer experience team.

Discussing the adoption of new technology in general at an organisational level, he said: "I think it's really fundamental to have a solid

➥

Adobe stock/Bruno

understanding of what you're trying to solve.

"So, looking at your operation as it stands today, and ensuring that you do the best with what you have available today. That is, [not necessarily] jumping straight to the [more high profile] applications, such as digital triage."

"When you're thinking about introducing AI into your environment, what's the effect on cybersecurity risk?"

He continued: "Once you've got your solid foundations in place, you can then look to optimise how that work is being currently managed. We advise looking at the agent-facing technology first, because it's easier to change than any kind of customer-facing interactions. That starts with quality and compliance automation, RPA and so on, moving into things like agent assist and AI-driven knowledge."

Ultimately, he said, it is only when an organisation has been through this operational audit process that it can start to think how members of the public interact with the service.

Moving onto specific AI/automation use-cases – in particular within the call-taking environment – he listed those which are currently "popular" with the company's clients. These included real-time summarisation of a call, as well as what he called "appropriate language and noise".

Discussing the latter, he said: "In certain environments, we see inconsistencies in how interactions are dealt with, whether that's by the human, by the process itself, or by some bias that's built into it. So, having that ability to understand across 100 per cent of interactions what's happening can be transformational."

Cuthbertson was followed by Frequentis's Reinard van Loo, who provided a view from outside the UK.

As mentioned, as well as the development of the technology itself, a key topic for the event was cybersecurity. Indeed, British APCO COO Duncan Swan kicked the day off with a clip from *Star Trek*, illustrating – albeit in a light-hearted way – what might happen if AI technology were to be infiltrated by a hostile actor.

The last two presentations of the day likewise focused on challenges that might present themselves through the use of AI. The first was delivered by Leonardo security consultant Dan Maund, while Black Marble's Robert Hogg finished proceedings.

Discussing 'Security risks around integrating AI', Maund split his presentation into several topic headings, including risk exposure, confidentiality, authenticity, accuracy "and a thing I call Skynet".

Discussing the first category, he said: "This is the first question that I want all of you to consider. When you're thinking about introducing AI to your environment, what's the effect on cybersecurity risk.

"In order to know this, I need to really understand the criticality of what I'm bringing into the environment. The idea of introducing AI into a control room to enhance productivity is great, until the AI starts going wrong.

Adobe stock/Bjjac

"Because at some point, with the emergency services, you're going to have to have that resilience built in. And potentially the only resilience you've got is to keep [staff] on the payroll so they can do the job if the AI isn't there. So BCDR – business continuity and disaster recovery – is pretty critical."

Circling back to the science fiction element introduced at the beginning of the day by Duncan Swan, Maund finished his presentation with a discussion of 'Skynet'. (For those who don't know, Skynet is a computer system that becomes 'self-aware' and instigates a global nuclear war in the *Terminator* films).

"How prepared are you," he said, "for the weaponisation of AI? I'm talking about somebody else having AI in their pocket, which they can then use to exploit the vulnerabilities that you already have.

"What we are looking at over the next decade is amplified threat actor capability. 'Script kiddies' [amateur hackers], within the next few years, are going to have an amplified capability. How rapidly is that capability going to scale up?"

He illustrated this through the example of "the old school Texas Instruments calculator", which apparently someone recently programmed to call out to ChatGPT in order to provide answers during a maths exam.

He concluded by saying that organisations need to identify and treat risk as a priority. "Before we even think about introducing the new AI, we've got to start protecting ourselves. So, get on with that risk management activity."

The last presentation of the day came from Black Marble's Robert Hogg. The session was introduced by Duncan Swan as "a summary of everything [Robert] has heard, stirring a few of his own thoughts into that".

Hogg began: "I want to state first of all that I'm a big proponent of AI. I love AI, and it's going to make a massive difference. But everything I'm going to be talking about is negative."

AI is already being used operationally, for instance as an aid to surveillance

Moving onto what he believes is likely to be one of the most pressing issues in relation to the technology, he continued: "If you're familiar with 'cookie blindness', where you look at a web page and you just hit OK... AI blindness is going to come and bite us very hard in the next few years."

He unpacked this, explaining that "suggestions made by AI will be very reliable and very consistent, and people will stop checking and just hit OK".

With that in mind, he urged everyone in the room – "for the good of our customers" – to think about not including the option 'Is this OK?'. Rather, he said, manufacturers should present the information so the users can make a choice, based on the information that has been gathered.

He continued, moving onto the data piece itself: "We've had lots of conversations today about what is data and what's AI built on. Actually, AI's built on 'information'.

"Raw data has a value, but information is slightly different. Information is data that has contextual, thematic and special awareness that can be identified repeatedly. On top of that, you can build AI."

With that in mind, he said, AI models need to be continuously rebuilt as new data comes in. "You keep training them and keep training them and keep training them," he said.

"And if you're validating them, they keep improving. But if you're having to do a massive manual process on that data, the chance of doing it successfully is very low."

Heading towards the end of his presentation, he moved onto bias, which was another key topic across the event. In relation to this, he urged members of the audience to familiarise themselves with the National Institute of Standards and Technology's AI Standards.

"[Another issue] we've got to think about is legal frameworks," he continued. "The EU now has a law in place for AI, the UK will have one within the next few years. I urge you to look at the EU as a framework to think about, making sure [you already know about it] going forward."

Artificial intelligence is only going to become more important, both to the emergency services and to society as a whole. It is a many-faceted issue, which will be a key area for British APCO going forward.