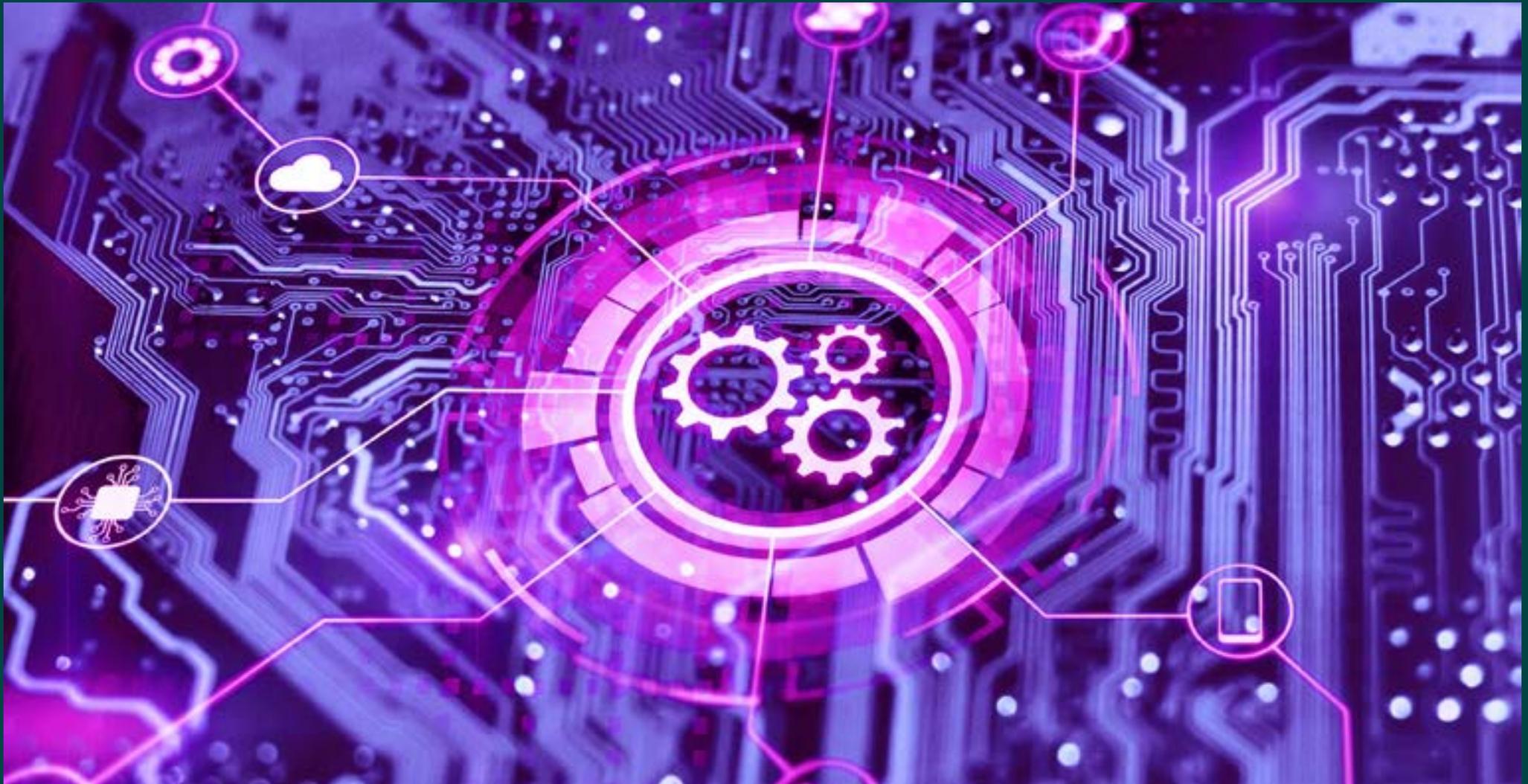


# Bots in the public sector: transformation in progress

*Reports and perspectives from the UKAuthority Automation & Bots4Good 2023 conference*



# Contents

1. A lever for change	2	6. Automation & Bots4Good	6
2. Issues and questions	3	Session One - Wednesday	7
Human Focus	<a href="#">3</a>	22 <sup>nd</sup> November 2023	<a href="#">7</a>
Target recurring benefits	<a href="#">3</a>	Session Two - Thursday	<a href="#">8</a>
Stakeholder engagement	<a href="#">3</a>	23 <sup>rd</sup> November 2023	<a href="#">8</a>
3. From automations to AI	3	7. Event Partner	9
Augmenting automation	<a href="#">3</a>	UiPath	<a href="#">9</a>
Use cases and outcomes	<a href="#">4</a>	8. UKAuthority	9
Sustainability impact	<a href="#">4</a>	9. UKAuthority 2024 Live Events	10
4. Central, local and healthcare initiatives	4		
Harnessing legacy systems	<a href="#">4</a>		
Setting the guardrails	<a href="#">5</a>		
Powering innovation	<a href="#">5</a>		
Cutting time, improving data quality	<a href="#">5</a>		
Trialling and piloting	<a href="#">5</a>		
Building skills inhouse	<a href="#">6</a>		
Humans in the loop	<a href="#">6</a>		
5. Beyond the hype cycle	6		

## Event Partner



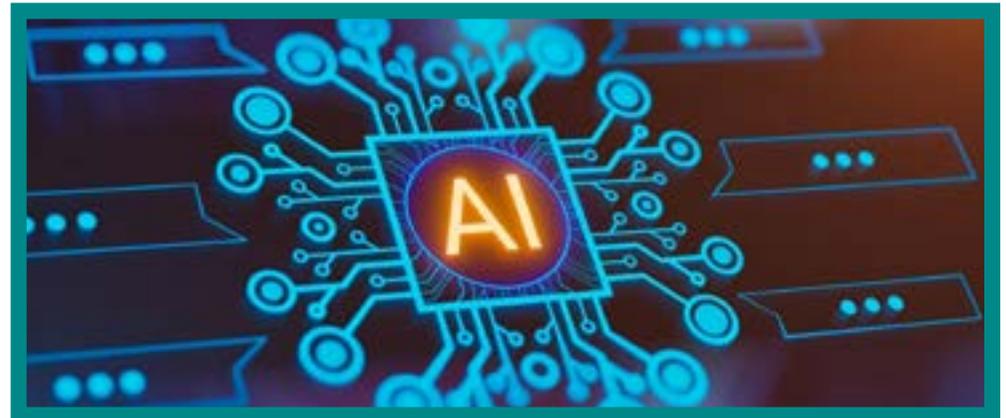
# 1. A lever for change

Automation has become a prominent element of the UK public sector in recent years, with a myriad of deployments in all areas. It is seen as a major asset in reducing costs, improving reliability and freeing up workers' time spent on mundane administrative tasks, but it should not be underestimated as a lever for transformation in the sector. It is providing the scope for significant change in how organisations structure their work and use their people.

This came through in the contributions to UKAuthority's Automation & Bots4Good conference at the end of 2023, in which representatives from several public service organisations reported on initiatives and provided perspectives on how things can develop further.

A core underlying theme was that with the public sector - under immense pressure from rising demand for its services and increasing squeeze on resources - needs to look closely at how it carries out its work, with a focus on how its technology stack can enable staff to provide their full value and free them from repetitive business processes.

This is where automation is crucial in supporting the change, especially as it evolves beyond the already common robotic processes, adding the capabilities of machine learning and artificial intelligence.



## 2. Issues and questions

**T**he event raised a number of issues around the deployment of automation, and conveyed a rising awareness of how machine learning and artificial intelligence are already influencing the outlook.

### Human Focus

Terminology is proving to be a delicate issue in some organisations. While some contributors were happy to talk about 'robots' or 'bots', others hinted at worries about the creating a perception of dehumanised processes, which can create opposition among employees and the public. This has prompted the use in some places of the terms 'digital workers' and 'digital assistants', with the desire to create a more reassuring impression of the technology.

This can influence thinking among staff and council members when building a business case, something that is still testing organisations among the slow starters in the field. [Robin Pembroke](#), programme lead for the [Government Digital Service](#) AI programme, said its approach has been to begin with a relatively small investment for innovations to establish an understanding of the technology. It has a longer term plan to make the case for further investment through the outcomes of its early projects.

### Target recurring benefits

Chris Butson, lead automation developer at [University Hospitals Plymouth NHS Trust](#) (UHT), noted that a crucial factor is recurring benefits from an investment, but these are often not taken into account in the early business case. He pointed to the trust's automation programme which began with anticipated savings over around £40,000 but is now expected to produce a total return over £655,000 over five years. While it may be difficult to be precise about recurring benefits, even a conservative estimate for the long term could do a lot to win support.

Similarly, many of the benefits were not identified in the first instance for automations at the [NHS North of England Commissioning Support](#) (NECS) Unit. Its technical architect [Jonathan Boyle](#) said it has been seeing additional returns in the second year and, while keeping the case as simple as possible, it can help to convey there will be more gains to come.

### Stakeholder engagement

The business discussions are always accompanied by worries about job losses – despite the familiar argument that the investments are about freeing up people for more challenging work rather than reducing headcount. Boyle said part of the way to overcome these is to run some early projects in which humans would struggle with a process or find it highly time consuming, as this helps them to see the value in the technology.

Butson emphasised the importance of stakeholder engagement. He said it can be valuable to engage early with managers and/or supervisors who understand the dynamics of a department and persuade them of the advantages, so they can allay the fears of their teams.

The scope for sharing automations, and thereby sharing the benefits, also came up for discussion. [Philip Sheen](#), head of public sector at event sponsor [UiPath](#), made the point that this can reduce the effort for organisations ready to pick up on the successes of others. But he added that there are small differences in how they handle specific processes and this needs a nuanced approach, not just a straightforward replication, in transferring a deployment in one to another.

## 3. From automations to AI

**W**hile the more straightforward deployments of robotic process automation (RPA) continue to account for most initiatives, it became clear at the conference that the rising profile of generative AI and large language models (LLMs) is influencing thinking on future possibilities.

### Augmenting automation

[David Knott](#), chief technology officer at the [Central Digital and Data Office](#) (CDDO), said that generative AI is capable of producing words and images in response to questions or requests, or to follow up information entered into a system, with ChatGPT being the user interface with the highest profile. While machine learning has added a predictive element to automations, generative AI is taking it beyond processing data into building machines and systems to make things more convenient for people.

But he added that it is still evolving and needs guidance, and CDDO wants to enable people to use the technology confidently and responsibly. This should involve steps such as: ensuring it is used within legal and ethical boundaries; that the tools are kept secure; the right tool is used for a specific task; there is meaningful human control at key stages; and it is done in an open and collaborative manner. There is also a need to build the skills to use generative AI and understand how to manage its full lifecycle.

## Use cases and outcomes

A cautionary note also came from Lianne Anderton, the delivery lead for the Intelligent Automation Garage (IAG) at [DWP Digital](#), who said there is a need to choose the use case carefully. It could be wasted in the wrong applications; but can produce positive results if its capabilities are in line with desired outcomes.

She pointed to her team's application of generative AI in helping to deal with the massive volume of post going into DWP, using the technology to scan and understand the context of letters to flag up which people are most in need of support. Launched in August 2023, it had already enabled the department to process and prioritise thousands of letters, many of them in handwriting, for urgent action.

"It's about starting off with use cases that have an impact but the world doesn't implode if it does not work as expected," she said.

## Sustainability impact

Another question arose on the effect of LLMs on environmental sustainability, as they can demand a high processing power. David Knott said training them is quite power-intensive and it is a downside to the shift that will take some time to resolve; and that CDDO asks people to consider the carbon footprint of using them and how they might be offset by reducing other computing activities. He said that the current models will not be sustainable in the long term, but that there are efforts to develop smaller models with chips designed to be more efficient. There could also be efforts such as setting up AI training units on sites with sustainable power sources.

"It's not a solved problem, but we're thinking about it and the industry is thinking

about it, and I think you will see it improve over time," he said.

# 4. Central, local and healthcare initiatives

A series of impressive projects from different areas of the public sector were presented to the conference.

## Harnessing legacy systems

Central government was well represented, with Lianne Anderton outlining how the Department for Work and Pension's Intelligent Automation Garage developed and deployed more than 70 virtual workforce solutions to help the department clear its backlogs and support the interoperability of legacy systems. She highlighted the example of an automated process to handle claims for budgeting loans to help people deal with emergency expenses. The old process took 36 days before the money was paid, but the automation reduced this to just five by taking relevant information from online applications, a document repository, the legacy CRM and mainframe, assessing the claim and providing a digital signature of acceptance. The process was developed in 12 weeks without any changes to the legacy technology and has the capacity to respond to events and seasonal peaks in demand.

Another solution, drawing on the capabilities of LLMs, can scan the 22,000 handwritten and typed documents the department receives per day, using contextual and sentiment analysis to spot key words and detect signs of people in distress. The cases are then passed to an employee with the experience and emotional intelligence to examine the information and recommend appropriate action, indicating when the need is urgent.

Anderton said the work has provided a big long term benefit for the department in the provision of an unlimited virtual workforce and the ability to scale up its automations.

## Setting the guardrails

The GOV.UK team in the Government Digital Service (GDS) has been working on a project using generative AI with a chatbot to improve the user experience of the platform. Programme lead Robin Pembroke, said it is part of an effort to develop new forms of interaction with GOV.UK to reduce uneven access across the country.

The chatbot was developed with an LLM to provide answers to questions using only content published on the website – which includes around 800,000 pages – and without using any personal information. It was tested internally with variables to manage the tone, brevity and nature of interactions between the user and chatbot, with rules to prevent it answering in any unwanted languages, and in a style that reflects that of GOV.UK. A second phase involved testing, first with 10 internal business users to assess the quality of answers provided through the model, then with up to 1,000 invited users, with a set of live dashboards providing the development team with indications of how they rate the quality of answers. Results are due to be published early in 2024.

“The current version quickly summarises the answer to what can be quite complex questions,” Pembroke said. “Without using the tool it might mean users will have to visit several pages.”

## Powering innovation

The work of the innovation squads in the [Department for Levelling Up, Housing and Communities](#) (DLUHC) was explained by collaborations and engagement manager Sarah Ward and delivery manager [Umar Sani](#). The squads comprise six people from different teams and at different grades in the department whose key attributes are a learning mindset and good communication and collaboration skills. They each devote half of their working time solving a problem over the space of six weeks.

It has tested two approaches to support the department’s HR operations. One has been to build manually scripted chatbots on Microsoft Power Virtual Agents to pick up key words to provide answers to common questions. The other, using Microsoft Azure Cognitive Search and ChatGPT, has been to develop a generative AI chatbot that can respond to

questions with information from the staff handbook and online sources. This had reached proof of concept stage at the time of the event, and Sani said the squad was testing possibilities to help staff go further in self-serving their HR queries and requests.

## Cutting time, improving data quality

A local government initiative was outlined by [Kurt Fray](#), head of IT and chief technology officer at [Norfolk County Council](#). It involved a process for payment to carers through the Direct Payment Support Service, which traditionally involved the updating of details provided to HM Revenue and Customs through a spreadsheet each month, which took a team of six people five days to complete. An automation of the data entry reduced a 20 minute process to four minutes and led to a sharp improvement in data quality.

Other RPAs have since been developed for processes including requests to the council’s IT services team, the processing of personal education plans in children’s services, records management in adult services and highways utility searches.

## Trialling and piloting

The Integrated Digital Service of [Leeds City Council](#) and [NHS West Yorkshire Integrated Care Board](#) has also shown ambition, in this case as an early adopter of Microsoft Co-Pilot for a number of processes. Chief digital and information officer [Leonardo Tantari](#) said that projects have included generating complex visualisations from Excel spreadsheets to provide insights on operations, summarising email chains and creating PowerPoint slides incorporating text and images from reports. The early experience has shown the platform can be used to quickly create job descriptions, support report writing and summarise meetings, the latter proving useful to staff who have been away when the meetings take place.

It has also used Power Apps to create a Discharge to Assess process to support the transfer of hospital patients to social care, and AWS tools to summarise audio translations of conversations that can feed in a person’s social care plan. The team has also looked at the possible use of Azure Cognitive Services and OpenAI tools to provide diagnoses of clinical conditions based on questions, cues and symptoms. Tantari said the latter requires considerable work to make it safe as a clinical product, but it provides a glimpse of the future for AI in healthcare.

## Building skills inhouse

NHS initiatives supported by UiPath platform were also showcased. Chris Butson outlined the efforts of University Hospitals Plymouth NHS Trust with RPAS. It began to build an in-house development team to handle coding and object oriented programming, with one lead developer and business analyst supported by two developers with a coding background. Butson said the priority was to find people who could think logically and were keen to learn. While the coders had no experience of UiPath technology, they were soon able to acquire the relevant skills through its academy.

The early emphasis was on small, frequent tasks carried out daily by the trust's information analysts, beginning with ambulance handover and deceased reporting. Work then to departments such outpatient appointments and procurement, which generated more project ideas.

Projected benefits for ongoing projects take the benefits to a higher level: 33,580 hours per annum, 21 full time equivalents and £3.6 million – with the potential for other cash releasing, societal and quantitative benefits. UHT has now built a reputation for automations that have led to talks for it to become a centre of excellence for the Devon Integrated Care Service, and to be asked by UiPath to become its NHS Autopilot site in 2024.

## Humans in the loop

NHS North of England Commissioning Support has used UiPath's platform to take the manual element out of some finance processes. The Dispatcher bot logs into the organisation's Oracle system daily to extra details of all reports, then going through these to determine if the report should go to Document Understanding or Performer path. If the former, an invoice is downloaded, its text digitised and the desired data classified using keywords and extracted using machine learning models. If the latter, the data is extracted then added to the relevant ledger.

The process takes account of the need for a minimum confidence threshold in the extraction of at least 90%. If the robot cannot do this the document is directed to the UiPath Action Centre, where it can be examined by a human and relabelled.

Overall, since it began to look at automation in 2019, NECS has built 30 robots, applied them to 49 live scalable processes, used them for over one million transactions and is now saving around 6,000 hours per year.

## 5. Beyond the hype cycle

In the background to the discussions was the sense that automations involving machine learning and AI are at the point in the technology 'hype cycle' at which they are approaching a peak from which interest will fall, only to recover after some time to be widely used. But this also came with a recognition that the technology could do a lot to relieve the pressures currently building on the public sector. These are unlikely to disappear anytime soon, even during the downturn of that hype cycle – ensuring that AI-enhanced automation remains to the fore.

David Knott summed up the priority by emphasising that the public sector should focus on pushing forward with automations to get to the "plateau of productivity" as soon as possible.

"The key thing for us," he said, "whether we are changing our businesses or building a technology that enables the change, is to sustain the momentum and keep the focus, whatever the fluctuations of the hype cycle. It will continue to fluctuate like a rollercoaster, but there is plenty of valuable work we can get on and do."

## 6. Automation & Bots4Good

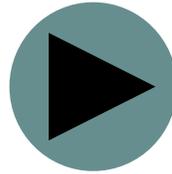


Helen Olsen Bedford, Publisher, [UKAuthority](#)

**M**ore than 300 delegates took part in this two online event exploring can the latest AI powered automation tools deliver a step change in efficiency and empower health and public sector workers.

Public sector leaders shared examples of what can be achieved and took part in lively discussions and Q&A sessions with delegate participation too. Discussions were hosted by Helen Olsen Bedford and all sessions can be viewed in full at [www.ukauthority.com](http://www.ukauthority.com).

## Session One - Wednesday 22<sup>nd</sup> November 2023



[Watch now](#)

**02:25: Innovating across the GOV.UK platform - Robin Pembroke, Programme Lead, GOV.UK /AI Programme, Government Digital Service:** An overview of the work underway to make GOV.UK more interactive and easier for citizens to navigate.

**13:44: Introducing Automation within UHP - Chris Butson, Lead Automation Developer and Business Analyst, University Hospitals Plymouth NHS Trust:** An overview of the automation work underway at the trust and their plans to start introducing RPA into other trusts within the region. ([Download slides](#))

**27:01: Machine Learning Assisting Invoice Processing - Jonathan Boyle, Technical Architect, North of England Care System Support:** This session covers how Machine Learning has revolutionised our Invoice Management processes. We look at why this became a need, the impact and how we plan to expand on this further in the future. ([Download slides](#))

**38:50: RPA is Dead. Let's talk about how work gets done! - Philip Sheen, Head of Public Sector UK & Ireland, UiPath:** The term RPA is nearly two decades old - it's legacy. However, it's still being referenced as part of organisations tech or transformation strategies and is common lexicon across the business landscape. Some have moved onto Intelligent Automation (and variations on the theme), however, we would suggest Public Sector bodies are still approaching this from the wrong angle. In this presentation, we will discuss the different approach of thinking through a lens of: "how do we actually execute work in our organisation?" in order to stimulate a different way of looking at the challenges facing the UK's Public Sector, as well as shifting perceptions of the world's leading Ai and Automation software business. ([Download slides](#))

**51:39: AI and the Evolution of Automation - David Knott, Chief Technology Officer, Central Digital and Data Office (CDDO):** Here David gives a broad perspective of his CTO for Government role and his experience of the use of automation across the range of industries he has worked in and the work the CDDO is doing now. ([Download slides](#))

**1:03:44: Q&A and panel discussion - all speakers**



**[Robin Pembroke](#)**

Programme Lead,  
GOV.UK and GDS AI Programme  
[Government Digital Service](#)



**[Chris Butson](#)**

Lead Automation Developer  
[University Hospitals Plymouth NHS Trust](#)



**[Jonathan Boyle](#)**

Technical Architect  
[North of England Commissioning Support](#)



**[Philip Sheen](#)**

Head of Public Sector - UK & Ireland  
[UiPath](#)

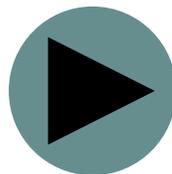


**[David Knott](#)**

Chief Technology Officer  
[Central Digital and Data Office](#)



## Session Two - Thursday 23<sup>rd</sup> November 2023



[Watch now](#)

**02:19: Robots can make a difference - Kurt Frary, Head of IT & CTO and Socitm Vice President, Norfolk County Council:** Join us as Norfolk County Council share their RPA Journey, providing valuable insights and sharing what has really worked from real life experience. ([Download slides](#))

**13:49: Insight into DWP Digital's Intelligent Automation Garage - Lianne Anderton, Intelligent Automation Garage Delivery Lead, DWP Digital:** Created in 2017, the Intelligent Automation Garage (IAG) is a fast-paced and collaborative workspace, using agile working methods to continuously improve and design-led practices to test and explore innovative ideas. The use of automation in the IAG is about simplifying and streamlining the customer and colleague experience and, in the process, becoming more efficient. All while ensuring that automation supports but doesn't take away human decision-making. The team working in the IAG are continuously innovating, industrialising, and scaling solutions to enable DWP Digital to deploy digital technology to automate routine tasks, industrialise these to increase productivity and scale them to support 20 million citizens. ([Download slides](#))

**25:23: DLUHC & Innovation Squads - Sarah Ward, Collaborations and Engagement Manager and Umar Sani, Delivery Manager, Department for Levelling Up, Housing and Communities (DLUHC):** A team at DLUHC has developed two chatbots to support its HR operations. In this session they explain how the development of the bots has been the first project of the department's new innovation squads approach to improve processes with further experiments and tests with AI chatbots planned. ([Download slides](#))

**39:16: The AI and Automation Journey in Leeds - Leonardo Tantari, Chief Digital & Information Officer, NHS (Leeds) West Yorkshire ICB and Leeds City Council:** Leeds has been on an automation and AI journey for some time. Leonardo shares his

experiences and learnings as well as the art of the possible for both the local authority but also within health and care. He also shares the challenges we need to overcome if we are to make the most of this emerging tech. ([Download slides](#))

**52:44: Q&A and panel discussion - speakers (with Lawrence Hopper, Deputy Director for Digital Products, DLUHC)**



### [Kurt Frary](#)

Head of IT and Chief Technology Officer, [Norfolk County Council](#) and Vice President, [Socitm](#)



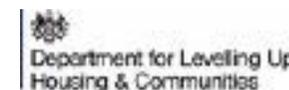
### [Lianne Anderton](#)

Intelligent Automation Garage Delivery Lead  
[DWP Digital](#)



### [Sarah Ward](#)

Collaborations and Engagement Manager  
[Department for Levelling Up, Housing & Communities](#)



### [Umar Sani](#)

Delivery Manager  
[Department for Levelling Up, Housing & Communities](#)



### [Leonardo Tantari](#)

Chief Digital Information Officer  
[NHS \(Leeds\) West Yorkshire ICB](#) and [Leeds City Council](#)

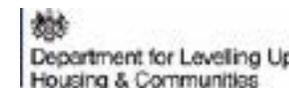


**NHS West Yorkshire Integrated Care Board**



### [Lawrence Hopper](#)

Deputy Director for Digital Products  
[Department for Levelling Up, Housing & Communities](#)



## 7. Event Partner

### UiPath

UiPath (NYSE: PATH) is on a mission to uplevel knowledge work so more people can work more creatively, collaboratively, and strategically. The AI-powered UiPath Business Automation Platform combines the leading robotic process automation (RPA) solution with a full suite of capabilities to understand, automate, and operate end-to-end processes, offering unprecedented time-to-value.

For organisations that need to evolve to survive and thrive through increasingly changing times, UiPath is The Foundation of Innovation™.

[Find out more about UiPath here](#)

Follow them on [X \(formerly Twitter\)](#) | [LinkedIn](#)

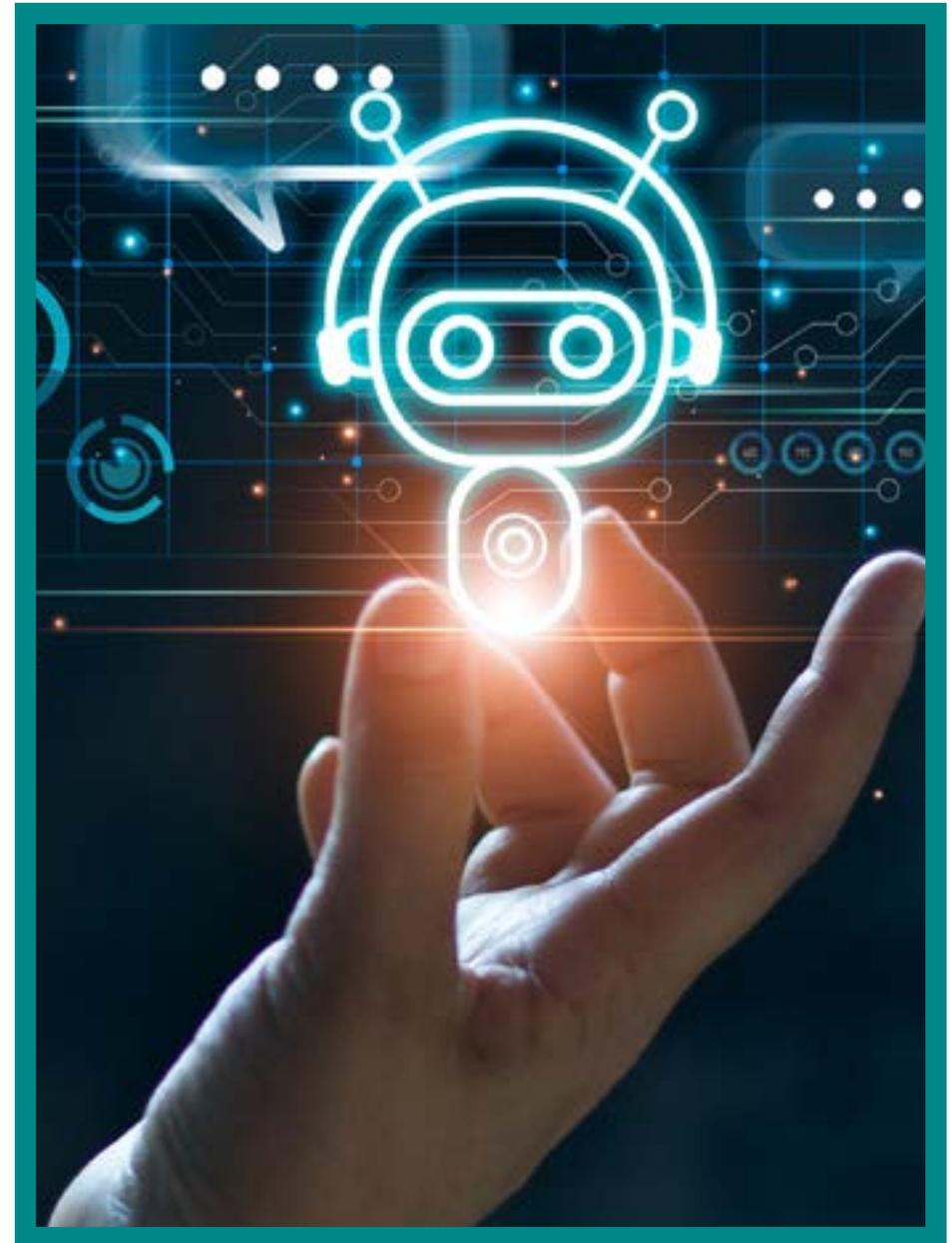


---

## 8. UKAuthority

This briefing note has been researched, written and published by [Mark Say](#) & [Helen Olsen Bedford](#), UKAuthority. [UKAuthority](#) champions the use of digital, data and technology (DDaT) by central and local government, police, fire, health and housing, to improve services for the citizens they serve.

© 2024 UKAuthority. All rights reserved. This document is provided 'as-is'. Information and views expressed in this document, including URL and other internet references, may change without notice.



## 9. UK Authority 2024 Live Events



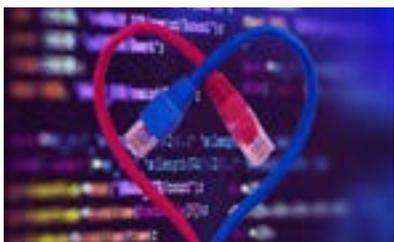
### [Powering Digital Public Services](#)

Wednesday 6 to Friday 8 March 2024 (11:00-12:30) : As budgets tighten ever further and demand for services rises, can we continue to innovate and deliver at pace to power the digital public services of tomorrow?



### [Resilience & Cyber4Good](#)

Wednesday 18 to Friday 20 September (11:00-12:30): With the threat of a cyber attack ever present and ever changing, we'll look at how we can build cyber defences and resilience to ensure continuity of service delivery.



### [Integrating Digital Health & Care](#)

Wednesday 15 to Friday 17 May (11:00-12:30): Focusing on innovation and the complex challenge of integrating health and social care data to improve the patient journey from hospital to home.



### [AI & Data4Good](#)

Wednesday 16 to Friday 18 October (11:00-12:30): How do we best unlock the power of data to gain valuable, actionable, insights on people, places and organisations and build a foundation for trustworthy AI?



### [Smart Places & Smart Communities](#)

Wednesday 19 to Friday 21 June (11:00-12:30): Exploring a smart future and how best to harness the right technology and data in a secure way to improve the lives of citizens whilst making sure no one is left behind.



### [AI, Automation & Bots4Good](#)

Wednesday 27 to Friday 29 November (11:00-12:30): Can AI-powered automation tools and bots deliver a step change in efficiency whilst empowering health and public sector workers?

Would you like to see more expert speakers and take part in more insightful discussions on how technology, digital and data is being used for the public good?

Sign up today to our 2024 virtual conferences using the links above or, to see all of our events, as well as catch up pages for previous events,

[by clicking here.](#)