Sellafield Ltd



Annual Research, Development & Innovation Review

2025/26

Where we've been • Where we are • Where we're going

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For more information on anything featured in the RD&I review, please contact:
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Foreword

2025/26 brought with it a huge vote of confidence in Research, Development & Innovation (RD&I) on the Sellafield site, when the Nuclear Decommissioning Authority (NDA) and Sellafield Ltd were awarded over £150m by UK Government to research, test and validate technologies which could be used in future to immobilise plutonium. This will enable the next chapter of nationally important work that takes place every day on our site.

This confidence has been earned through decades of leading nuclear innovation in our business. From being home to the world's first commercial nuclear power station 70 years ago, to today where we lead the world in nuclear robotics, we have always been at the forefront of science and technology in our industry. RD&I has benefited not just how we deliver our mission, but the broader mission of the NDA Group. And by working with so many talented partners in the supply chain and academia, we continue to contribute towards the development of UK PLC.

In last year's Annual RD&I Review we introduced the 4 themes of Science, Technology, Application and Command, which are amplifying the benefits on offer by integrating different solutions into broader systems. This year's review will show you how some of that work has progressed since, as well as show you some of the other exciting and varied projects underway in our business. Together, they are keeping us at the forefront of how nuclear decommissioning can be delivered. They are keeping our people safe, and delivering real value for the UK taxpayer.

Over 70 years into our mission, we are only just getting started. There is decades and billions of pounds worth of work ahead of us. By leveraging RD&I, we are making Sellafield Ltd one of the largest opportunities in UK PLC. I hope you enjoy reading.



Roddy Miller

Chief Operating Officer

Value of RD&I

To get value from RD&I, it must reach operations on the Sellafield site. We define and measure this value using the seven categories of the NDA Value Framework[1], shown opposite. The projects featured throughout this review demonstrate how RD&I contributes across the full breadth of the framework. Throughout the document, value framework icons highlight the categories to which each project contributes.

Over the past year, we have continued to mature our approach to value capture and measurement. Building on the foundations established in previous years, we are now using enhanced value assessment methods to improve decision-making, prioritise investment and better demonstrate the benefits delivered by projects like the ones featured here. This gives us greater confidence that our RD&I work is focused on the areas of greatest strategic and operational impact. For example:

- In our longstanding partnership with the UK National Nuclear Laboratory performing technical work across our site, this year's work scope delivered an estimated **£250m** benefit.
- In our Sellafield Advanced Business Analytics team who turn complex data into clear actionable insights for our business, we have seen a **15x** return on our investments.
- This year, deployed innovations across our business (page 24) delivered over **£200m** of benefit.

The value created through RD&I extends beyond the Sellafield site. We work collaboratively across the NDA Group, supply chain and academia to develop capabilities that can be adopted more widely. In our Game Changers[2] programme alone, not only could its projects unlock over **£1bn** of benefit for our core mission, working with us has resulted in supply chain partners unlocking **£14.5m** of additional funding and contracts from other sectors, securing **40** existing jobs, creating **10** new jobs, and **17** early-career opportunities for apprentices and interns.

Through this holistic lens of value, we are demonstrating how RD&I for the Sellafield site is not just a critical enabler of our mission, but one of the biggest opportunities in UK PLC.


Health and safety


Enabling the mission


Lifetime cost reduction


Security


Hazard and risk reduction


Socio-economic impact


Environment

Science

Science underpins everything we do. It provides the evidence, understanding and confidence that enable us to operate safely.

Because of this, our science programme is at the heart of our business. It develops the fundamental understanding needed to address some of the most complex challenges in nuclear decommissioning. It helps us reduce uncertainty, manage risk and identify new opportunities for nuclear operations.

This theme highlights a selection of projects from across our four scientific research areas[3] of materials science, process chemistry, particulate behaviour and environmental science. These disciplines provide the knowledge that supports current operations, as well as inform the technologies and capabilities we will need in the future. From improving our understanding of legacy facilities and nuclear materials to developing new approaches for hazard reduction and environmental protection, science remains the foundation on which our mission is built.

Our scientists work alongside a broad network of universities, national laboratories and research partners across the UK and internationally, helping to advance the global understanding of nuclear decommissioning challenges. To learn more about our Areas of Research Interest or opportunities to engage with our science programme, please visit the *How to do Business with Sellafield Ltd* page on GOV.UK[4]

Featured projects

- SIXEP waste radiolysis
- Beach monitoring
- Box filter corrosion

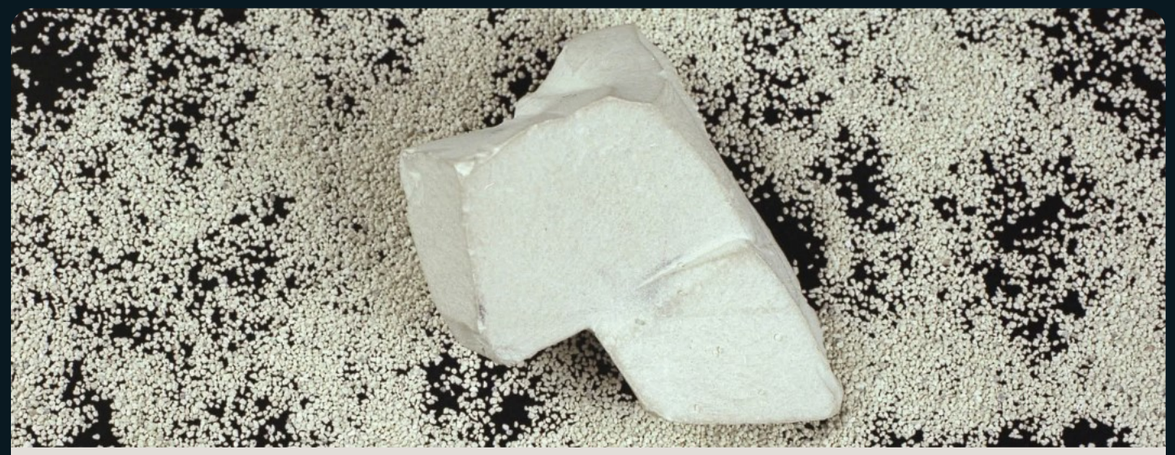


SIXEP waste radiolysis

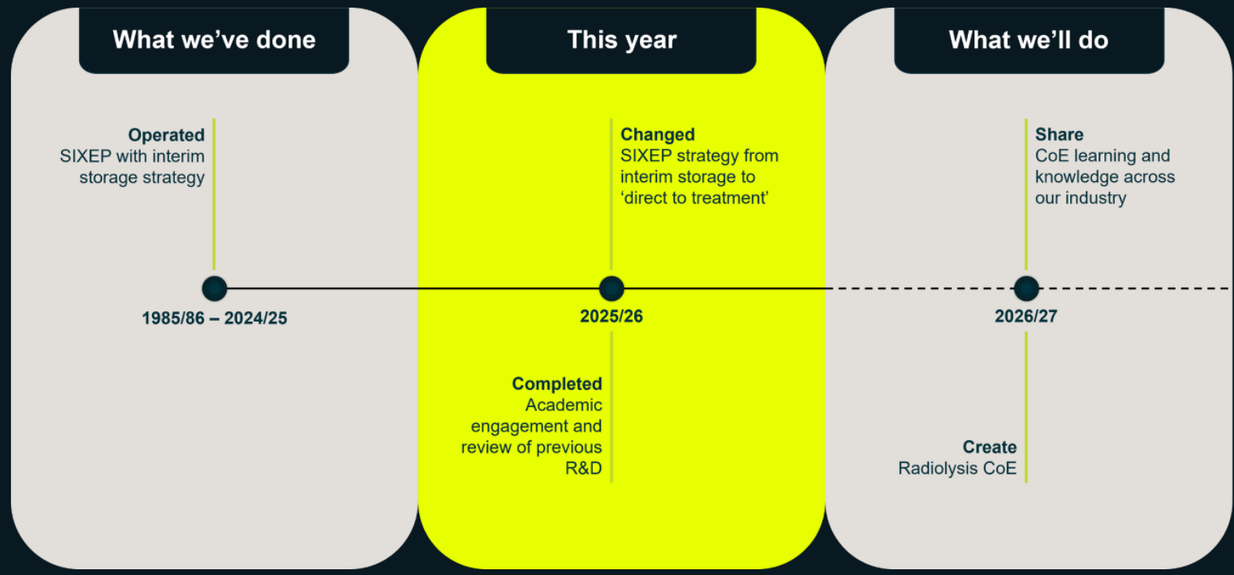
Our Sellafield Site Ion Exchange Plant (SIXEP) facility is critical to our site. For decades, the clinoptilolite (clino) waste it generates has been stored in large internal holding tanks within the facility, but we have been unable to maximise this storage capacity due to historic assumptions of hydrogen generation via radiolysis. As part of the work to underpin a strategic decision to send SIXEP waste 'direct to treatment' instead of storing it for long periods, we revisited these assumptions.

This year, our science community completed an extensive review of technical codes and existing Research & Development (R&D) from the Harwell site which spanned back decades. In collaboration with multiple experts in academia, we were able to safely update our models of hydrogen generation, resulting in a 50% reduction in the bounding hydrogen generation rate for clino waste.

With this new understanding, we can unlock significant future savings in SIXEP by being able to place more waste in our existing storage facility and avoid building billions of pounds worth of additional storage. We can also increase the amount of time our operators can safely spend maintaining the plant. In addition, we will establish a new radiolysis Centre of Expertise (CoE) to apply this knowledge across our site and the nuclear sector.



During storage and processing of used clinoptilolite, hydrogen can be generated via radiolysis. This work has developed our sub-atomic understanding of radiolysis, meaning we can now better predict how much hydrogen is generated, and increase our capacity for safe storage and operations for SIXEP waste.



50%
Reduction in assumed hydrogen generation rate

2x
Time for safe operations

£1.6bn
Future savings enabled

Delivery groups

- Spent Fuel & Effluent Management
- Science Programme

External partners

- UKNNL
- Uni of Manchester

Value framework alignment

Beach monitoring

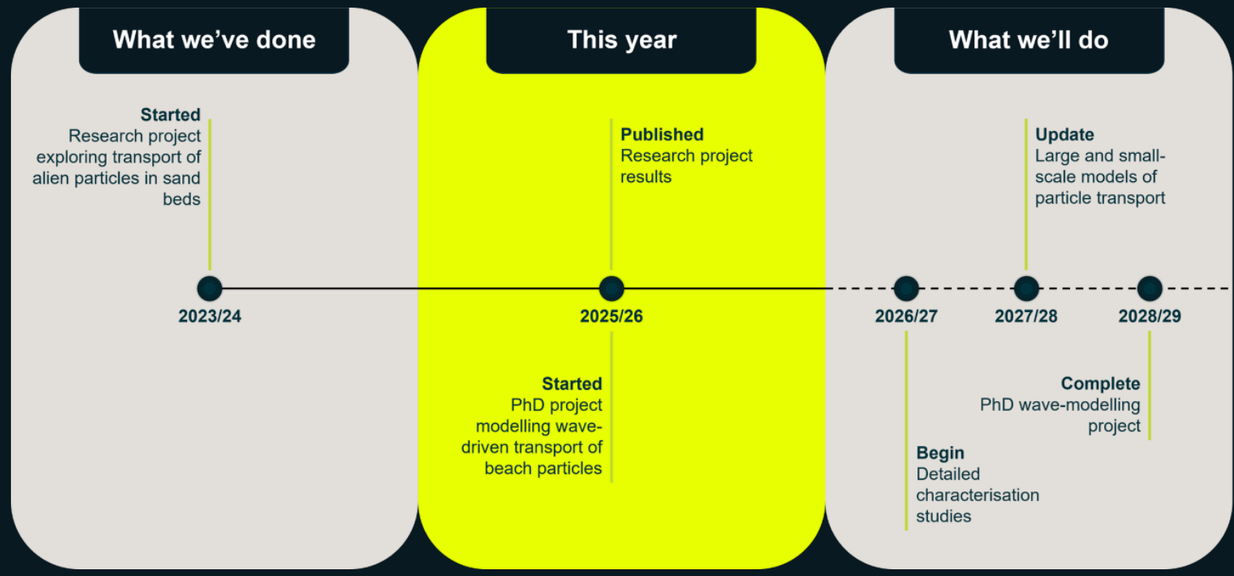
Protecting the environment is at the heart of our mission, and this includes managing the impacts of historic operations at the Sellafield site. Until now, industry understanding of how historic radioactive particles in the sea move via waves and currents has been limited. This poses a challenge to effective monitoring of coastlines and beaches close to nuclear facilities like ours.

To address this, over recent years we have led groundbreaking research to characterise the transport of such particles under large coastal waves. This year, the results of this research were published[5]. The study has produced new fundamental insights into the dynamics of particles in coastal sand beds, identifying that the density of particles is the primary factor that impacts how they are transported.

With this new understanding, we have now launched an NDA-funded PhD project modelling wave-driven transport of beach particles. Applying state-of-the-art modelling to this new data will underpin our assessment of environmental risk and future beach monitoring methods.



Experiments were conducted in the Aberdeen Oscillatory Flow Tunnel, a laboratory tank capable of recreating similar flow conditions to those under large coastal waves. Colour-coded particles were placed on a sand bed, and their dynamics were analysed using particle tracking techniques.



1,000,000 m²
Area of beach monitored every year

20 years
Of beach monitoring

< 2mm
Average size of particles

Delivery groups

- Environmental Management

External partners

- HR Wallingford
- NDA
- NDC
- NRS
- UHI
- UKNNL
- Uni of Aberdeen

Value framework alignment

Box filter corrosion

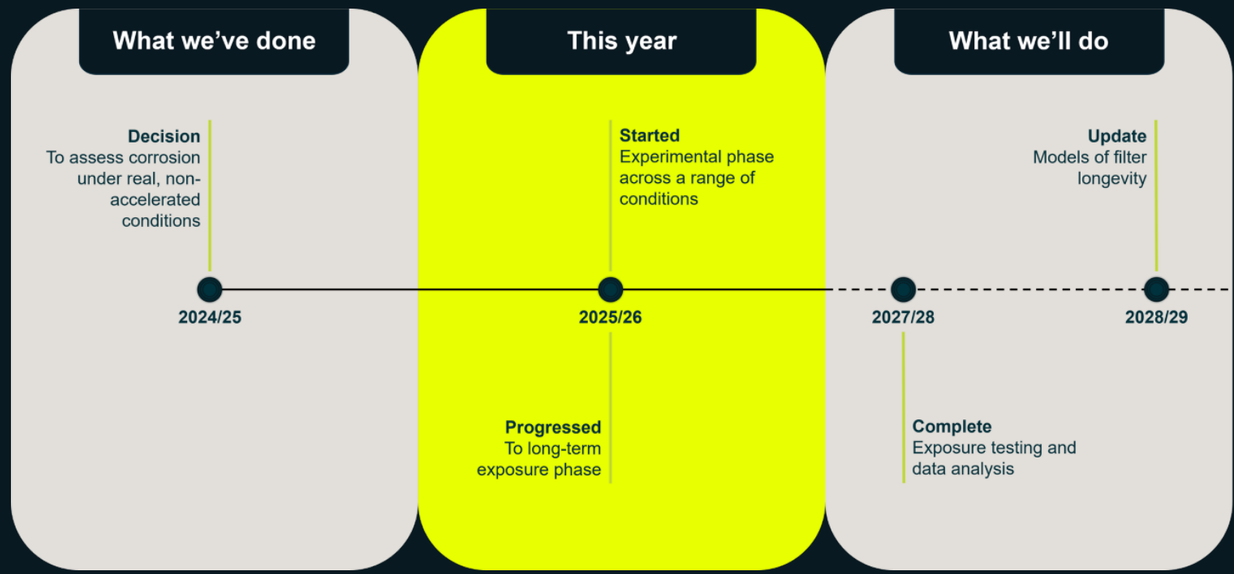
To allow safe gas exchange and prevent potentially dangerous hydrogen build up, our interim storage boxes feature high-performance filters, which also prevent the release of harmful particles. When in storage, boxes are held in conditions which may cause these filters to corrode over time, impacting their performance.

This year, we began experimental research to determine which environmental conditions trigger this corrosion, and how quickly it progresses under those conditions. The project has already generated valuable insights across a range of salt loading and humidity conditions, allowing us to progress to the long-term test phase where it will continue generating the data needed to underpin our future decisions.

Over the next 2 years, the project will complete testing and detailed analysis to see how the corrosion impacted the condition of the filters. We will then be able to use this new knowledge to update our models of how long filters are expected to last under different conditions. This increases confidence in filter performance, as well as the safety of storage boxes and the environment. It also reduces the need for future rework and inspections.



A magnified view of a filter. The extremely high surface area is susceptible to salt-induced corrosion in humid conditions. Assessing this corrosion as it starts and progresses will underpin our assumptions of how effective the filters are over time.



100,000
Filters needed over our mission

35 years
Minimum interim storage period

> £10m
Potential cost avoidance

Delivery groups

- Retrievals
- Science Programme

External partners

- UKNNL

Value framework alignment

Technology

Technology is creating new possibilities across every area of our business. Every year, we combine advances from industry, academia and the wider technology market with our scientific expertise to develop and validate new technologies that have the potential to transform how we deliver our mission.

The Technology theme explores a selection of projects which could deliver operational technologies in the years to come. In this section you will see there are no parts of our mission where we aren't constantly looking to improve how we work.

But with one of the largest and most complex industrial sites in Europe, this is just a small sample of the opportunities presented by our site and the exciting technology projects underway to address them.

We are developing these technologies of tomorrow in partnership with organisations of all types, from government partnerships and global technology leaders to innovative small and medium-sized enterprises. Working with suppliers, research organisations and industries across the UK and around the world, we have built a diverse innovation ecosystem to help solve our most complex challenges. To learn more about opportunities within our supply chain, please visit the *How to do Business with Sellafield Ltd* page on GOV.UK[4]

Featured projects

- Smart cans
- RrOBO toolkit
- MicroUAV



Smart cans

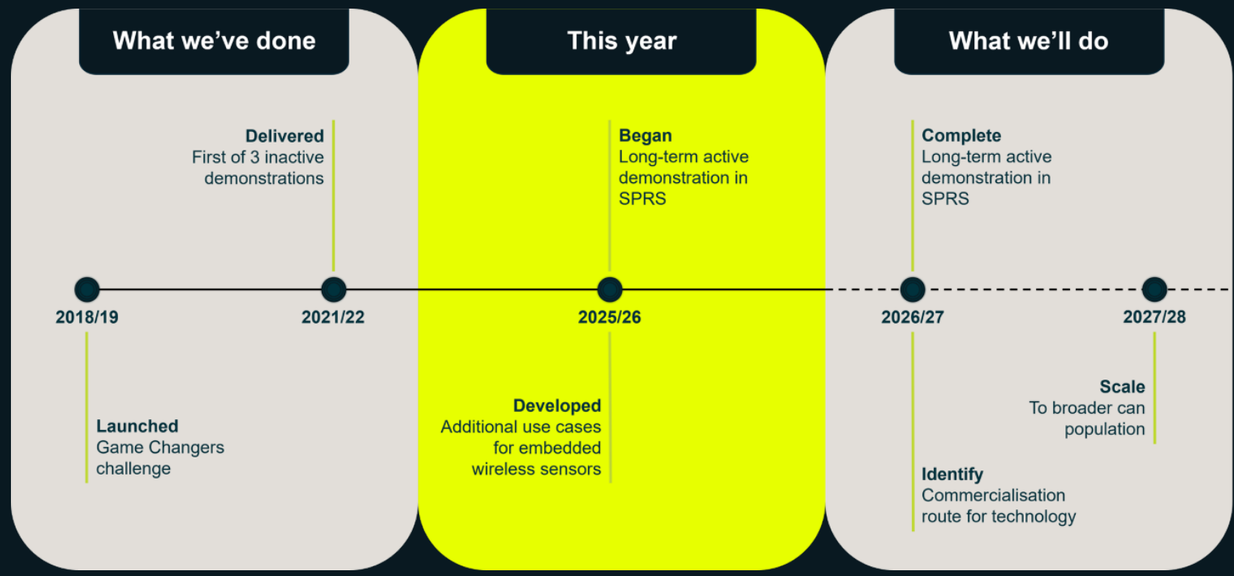
In previous editions of the Annual Review, we have shown you the development of our Smart Can project from underpinning science through to a working prototype. We developed a robust, long-life sensor which can be attached to Special Nuclear Material (SNM) cans, providing real-time data on the internal condition of each can and whether they are performing in line with expectations. The sensor is capable of operating continuously for decades, eliminating the need for costly and higher risk manual inspections of cans.

This year, those years of development showed tangible results when we installed the first sensor in an active environment. We attached it to a test canister in the Sellafield Product and Residue Store (SPRS), where it is now successfully capturing and transmitting data to operators.

Moving forward, the first can will remain in SPRS to complete its long-term trial, while in parallel we work with the technology provider to fully commercialise the product. This work has also revealed other use cases on our site that the sensors could be adapted for, such as the monitoring of ducts. We look forward to bringing you updates on all of this work in future editions of the Annual Review.



The disc-shaped sensor can be attached to the end of SNM cans, where it monitors the internal temperature and pressure of the can before transmitting the data in real-time to operators. Wireless data transmission is very challenging in heavily shielded stores.



30,000
Cans on Sellafield site

£2,000
Current cost of 1 manual can inspection

£20m - £50m
Potential saving

Delivery groups

- Special Nuclear Materials
- Game Changers[2]
- Science Programme

External partners

- Sensor Driven
- FIS360
- UKNNL

Value framework alignment

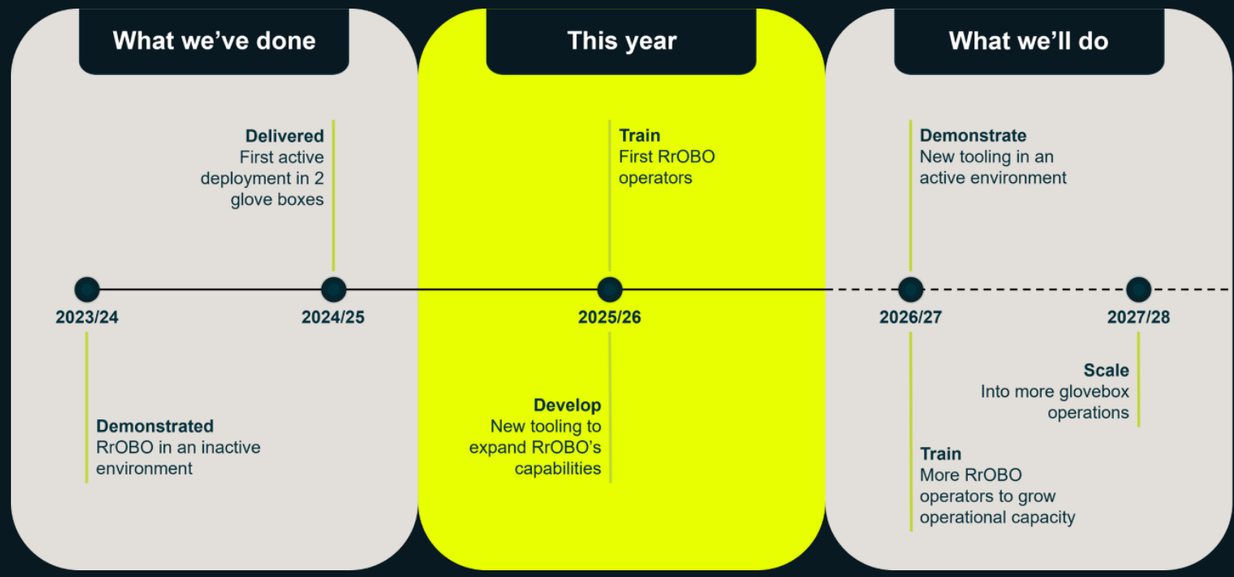
RrOBO toolkit

(Risk reduction of glovebox operations)

In last year's Annual Review[6], we shared the progress we had made with our industry-leading robotic arm RrOBO, which had been successfully deployed and operated to clean the contents of two legacy gloveboxes in our mixed oxide demonstration facility.

But that was just a starting point for the impact RrOBO can have on our operations. This year, we built on that success by developing new size reduction tools that will expand RrOBO's capabilities even further, allowing it to perform more operations within gloveboxes. We have also trained the first 2 of our own operators to use RrOBO, growing our internal capability and ensuring that our operators have the latest skills that make them best-in-class.

To continue RrOBO's journey to deployment across our fleet of gloveboxes, we are now working to train more operators within our business, and demonstrate RrOBO's new tool selection in an active environment for use in future operations.





The new tools — including an angle grinder, multi-tool and impact driver — were tested in an inactive environment. The RrOBO arm can attach and detach the tools as needed, allowing it to perform more varied and complex size reduction operations within gloveboxes.

5
New tools developed

2
Sellafield Ltd operators trained

£35m-£547m
Potential saving

Delivery groups

- Remediation
- CRAI Programme

External partners

- A2R Consortium
- AtkinsRéalis
- TKE

Value framework alignment

MicroUAV

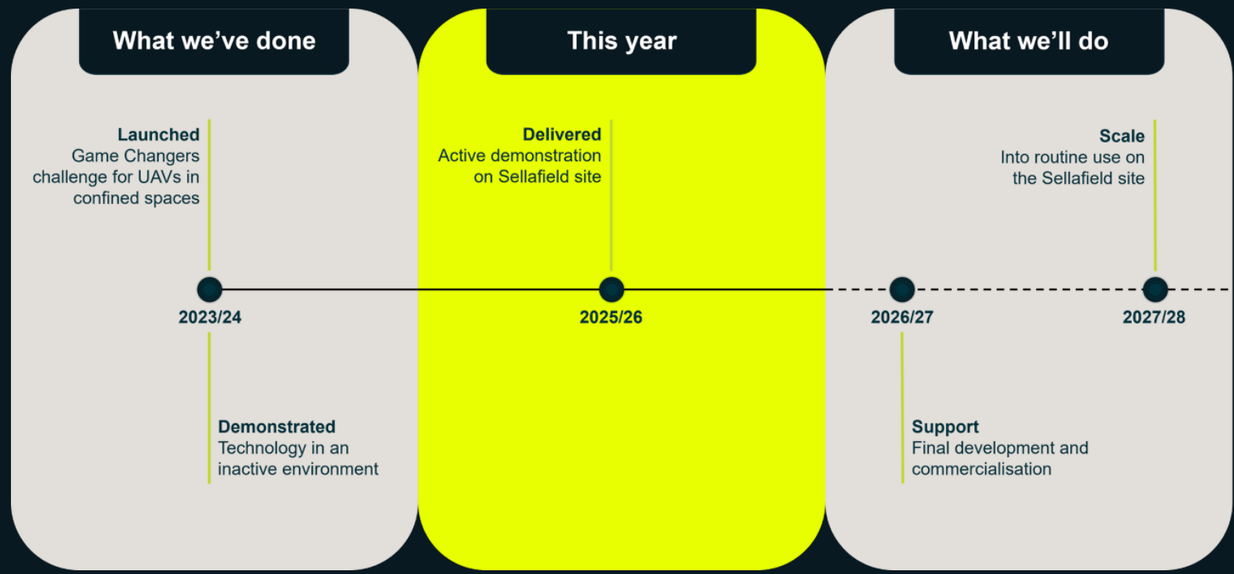
The Sellafield site houses large assets which are highly radioactive and contained within secure cells. We need to be able to inspect these assets to decide how to safely operate, maintain or decommission them. But access to them is often limited to confined spaces. Previous inspection methods — such as porthole cameras and tethered remote-operated vehicles — would only allow partial inspection of these assets.

This year marked the first active demonstration flight of MicroUAV, a hand-sized UAV which is small enough to be deployed through narrow portholes and navigate in confined spaces. Deployed into a buffer tank within our Highly Active Liquor Evaporation and Storage plant, we achieved a huge success. The entire tank was successfully inspected, and its condition recorded. This let us complete a technical assessment of the tank much more quickly and with much more confidence than would previously have been possible, which in turn enabled us to return the tank to service and avoid the costly option of having to find a contingency solution.

With this first achievement under our belt, we will now be working to support the commercialisation of MicroUAV, with an ambition to make it available to other space-restricted operations on our site.



MicroUAV is a hand-sized UAV which can survive hazardous environments. Its small size allows it to be deployed through narrow ports via a deployment arm, which it launches from to access confined spaces other solutions couldn't. It provides a 360°, detailed view of our assets.



150mm
Size of ports now accessible

> £1m
Saving from first flight

4
Additional facilities being engaged

Delivery groups

- RTG
- Game Changers

External partners

- Ice9 Robotics
- FIS360
- UKNNL

Value framework alignment

Application

RD&I only creates value when it is successfully applied on our site. While scientific research expands our understanding and technology development creates new capabilities, it is through application in the operational environment that these advances deliver tangible benefits to our mission.

Across our business, this transition from innovation to implementation is enabled by strong collaboration between operational teams, subject matter experts, technical specialists and supporting functions. Together, they ensure that new solutions are adopted safely, efficiently and at the scale required to make a meaningful difference.

The Application theme highlights examples of technologies which have moved beyond development and into operational use during the year, and are now contributing to mission delivery.

Many of the technologies featured in this section are also being expanded into new use cases across our diverse site. By scaling proven solutions and sharing learning across the NDA Group and wider nuclear sector, we are maximising the return on RD&I investment and accelerating progress towards the safe, secure and efficient delivery of our nationally significant mission.

Featured projects

- Camdroid
- Alpha active demonstrator
- AI

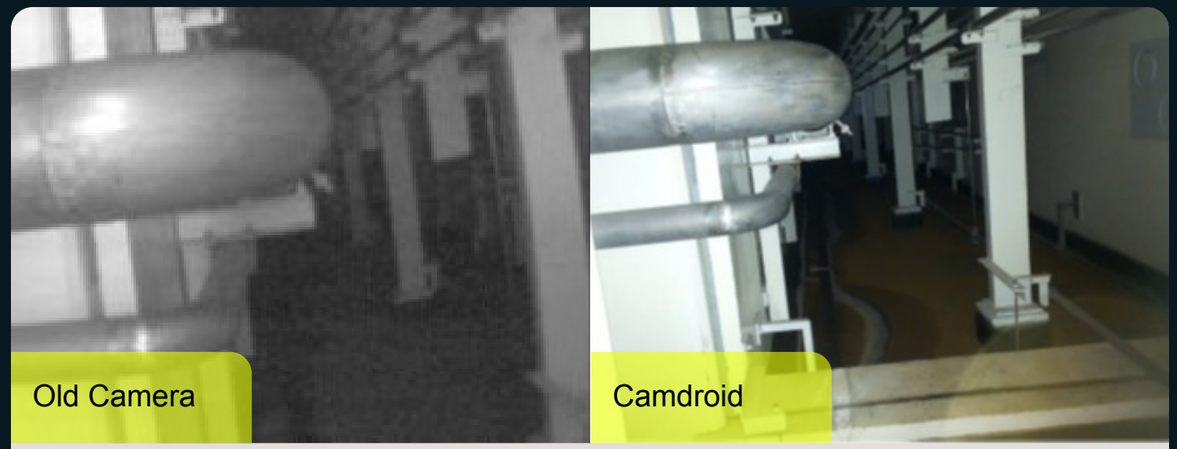


Camdroid

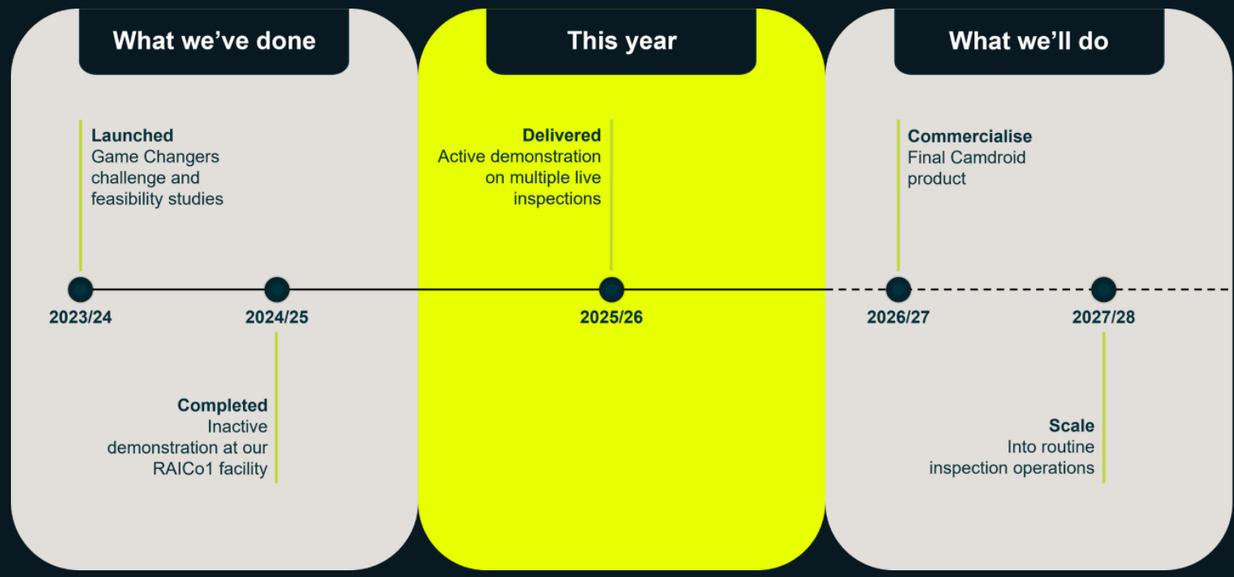
Last year[6] we featured Camdroid: a narrow, maneuverable, camera-based inspection device that can be deployed through tiny 19 mm access ports to capture high-resolution images and video inside difficult-to-reach nuclear facilities. Camdroid had been tested in an inactive environment, and was due to be trialled on live inspections on the Sellafield site for the first time.

This year, those active trials took place, and at scale. Camdroid was used by our Spent Fuel & Effluent Management portfolio to conduct dozens of inspections across multiple assets. The benefit was immediately clear, with the quality of video data vastly surpassing what we were previously able to gather. This data has already given us better understanding of the internal condition of those assets, allowing us to make better decisions for their future maintenance and reducing the risk of having to delay decommissioning schedules.

Following this resounding success, Camdroid will undergo final developments while we support to fully commercialise the technology. We aim to make Camdroid a standard tool in our inspection toolkit, where it can be applied to the other assets on our site where we know it will add value.



The image on the left shows the inspection footage we were previously able to collect which was low resolution and filmed in black and white, offering limited insight into the condition of assets. The image on the right shows the new, high definition and full colour footage we have now gathered with Camdroid.



40
Inspection ports accessed

£4m
Saved for each month of delay avoided

5-10
Annual use cases

Delivery groups

- Spent Fuel & Effluent Management
- Game Changers[2]

External partners

- Design Driven Solutions
- FIS360
- Ice9 Robotics
- UKNNL

Value framework alignment

Alpha active demonstrator

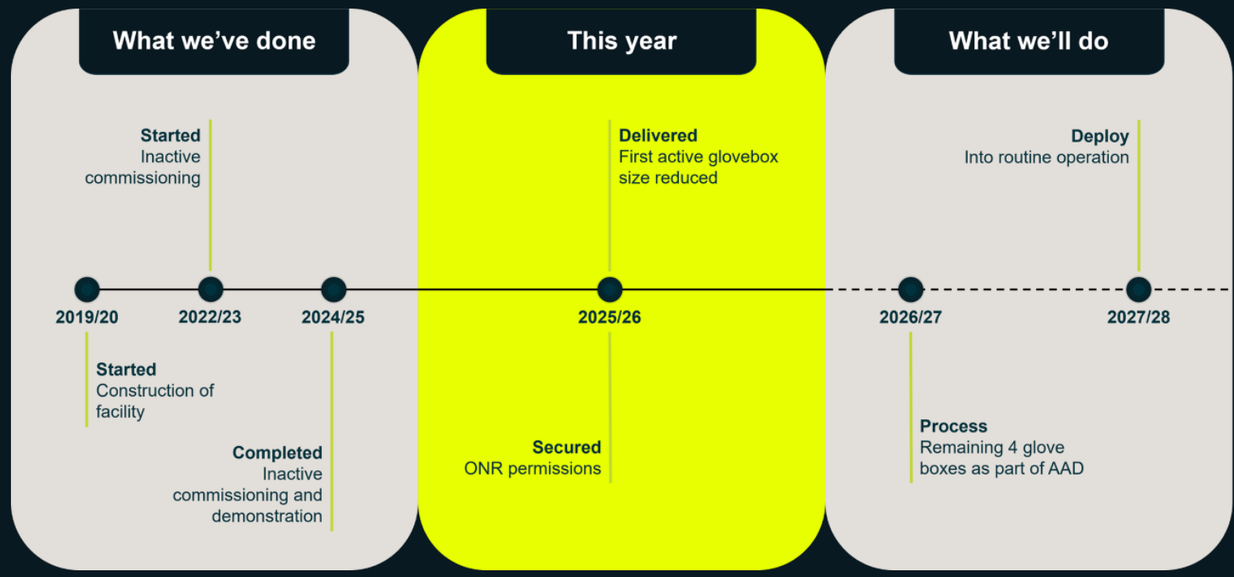
In the 2021/22 Annual Review[7], we updated you on the progress of our Alpha Active Demonstrator (AAD) facility. Constructed within a laboratory on our site, AAD uses robotically controlled lasers to reduce the size of legacy alpha-contaminated gloveboxes; heavy, complex enclosures which could pose a risk to operators when decommissioning them using manual methods.

Following successful commissioning and handover to operations since then, the AAD has now delivered a world first by successfully size-reducing its first active glovebox. In doing so, it proved that the entire process of glovebox decommissioning — from preparation, to laser cutting, and finally to packaging of waste — can be performed remotely. This removed the need for operators to approach the glove box to perform the work manually in air-fed suits.

Moving forwards, a further four gloveboxes are scheduled to complete the active demonstration programme to demonstrate repeatability, robustness, and system flexibility. Once that has been achieved, we will aim to transition the AAD into full routine operations within our Mixed Oxide Demonstration Facility. AAD's fantastic achievement will provide a repeatable model for future decommissioning.



The glovebox is placed on a 3-axis cutting table which works together with a laser, mounted onto a 6-axis robot providing 9 degrees of freedom for cutting. The system uses gravity and a vibrating trough to collect, move, lift and tip cut pieces into a drum remotely.



£400,000
Lifetime storage cost of a single glovebox

750
Alpha contaminated gloveboxes on site

20
Air-fed suit entries avoided for one glove box

Delivery groups

- Remediation
- Alpha operations

External partners

- AtkinsRéalis
- Taylor Knightly Engineering
- Cyan Tec

Value framework alignment

AI

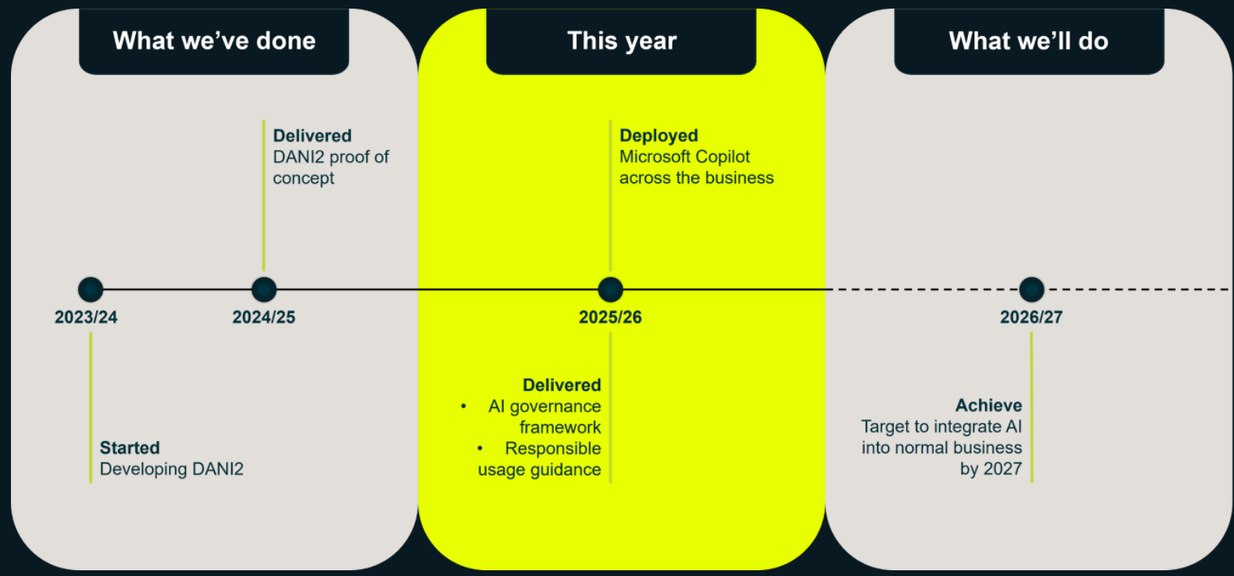
In last year's annual RD&I review[6], we showed you DANI2: a large language model (LLM) virtual assistant tool we developed which let our colleagues easily interrogate and receive tailored summaries from the decades of information we have in our business. This was a key milestone in delivering the target from our AI strategy[8] to embed AI tools in our everyday operations by 2027.

Since then, the AI market has advanced at a rapid pace, meaning other tools offered more capabilities than our in-house products. Building on the learning and success we gained from DANI2, this year we pivoted to introduce Copilot into our business, and have made it available securely to our entire workforce. With the sophistication of AI tools increasing, we must ensure we use them safely. This is why, alongside Copilot, we launched employee guidance on how to use AI tools safely and confidently without placing our data at risk.

With these foundations in place, we are well positioned to continue our adoption of AI in areas where it adds operational impact. We are now working to implement an AI Strategic Implementation Plan which establishes a formal AI governance framework to ensure that future AI adoption remains ethical, compliant and transparent.



Microsoft Copilot is an AI-powered assistant that helps people work more efficiently. It combines LLMs with information from business data, applications, and web search to improve productivity and decisions, while maintaining enterprise security in our broader Microsoft suite.



27
Minutes saved per day per user

25%
Of our workforce now using AI regularly

£40m
Saving over 10 years

Delivery groups

- CRAI Programme
- Information Services Organisation

External partners

- NDA
- Microsoft

Value framework alignment

Command

The pace of technological advancement continues to accelerate. Developments across technology domains are creating new opportunities to transform how we operate, allowing us to move beyond isolated technological solutions and towards fully integrated capabilities.

In last year's Annual Review, we introduced the Command theme, which showcases how we are bringing these technologies together into connected systems that can understand, inform and coordinate activities across our site. By integrating platforms, sensors, data sources and intelligent decision-support tools, we are creating the foundations for a more connected operational environment, where information flows seamlessly and technologies work collaboratively to achieve outcomes that would not be possible independently.

This approach will enable increasingly remote, autonomous and data-driven operations. From reducing the need for our people to enter hazardous environments, to providing richer situational awareness and supporting complex decision-making, these capabilities have the potential to fundamentally enhance how decommissioning work is planned and delivered.

Command is therefore more than a technology theme. It represents a strategic shift towards an integrated ecosystem that can adapt and evolve as new technologies emerge. By establishing common architectures, standards and approaches, we are building a scalable foundation for future innovation.

Featured projects

- Industry X
- Immersion rooms
- Standardised robotic architecture

Image generated by Copilot for illustrative purposes only

Industry X

In last year's Annual Review[6] we introduced Industry X, our vision for how different technologies could be integrated together to achieve much more than they could individually. The first phase proved this ambition was possible, delivering a digital platform that combined data from robotics and sensors, and making it accessible to teams in remote locations.

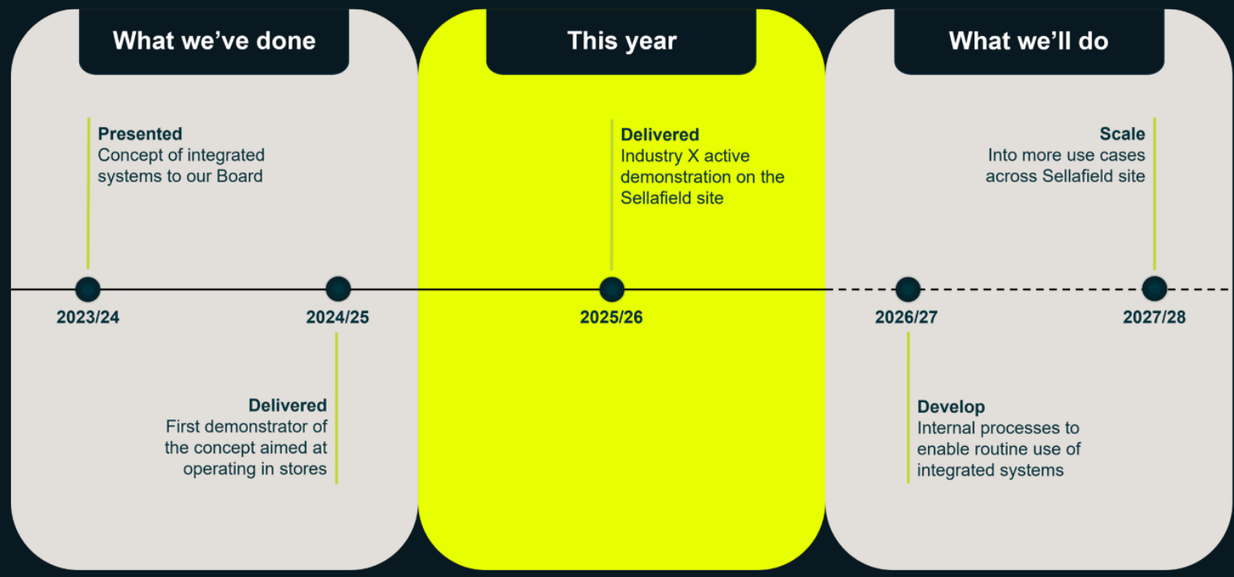
This year, we moved into the next phase of Industry X by demonstrating it with operational technology on the Sellafield site. In this industry first, a quadruped robot, fixed sensors and cameras were all combined into a single system, with data securely transferred to allow teams based in different locations to not just view and analyse the data being collected - but control the technologies remotely. During the trial, the system demonstrated the ability to support 35 inspections per week, reduce the time needed to complete each inspection, and reduced the need for people to enter high-hazard areas.

Looking ahead, the opportunity is significant. Deployed across the Sellafield site, Industry X could give our teams a more complete understanding and better control of our assets. We are now working to develop the internal processes needed that will allow us to use integrated systems routinely for operations.



Image generated by Copilot for illustrative purposes only

New technologies can deliver far greater operational impact when integrated as a single connected system. In future, these systems will give our teams a much more complete and timely view of their asset's condition, and avoid them having to enter hazardous environments by allowing them to operate these systems remotely.



35
Weekly inspections required in first facility

2 hours
Saved per inspection

£130m
Potential annual saving across the Sellafield site

Delivery groups

- CRAI Programme
- Remediation

External partners

- AtkinsRéalis
- Hoppa
- Oxford Robotics Institute

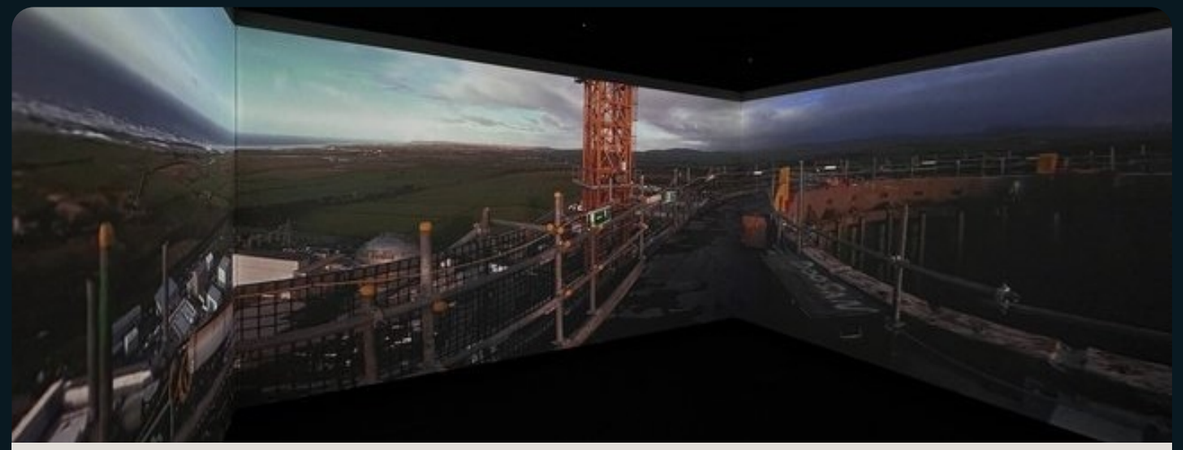
Value framework alignment

Immersion rooms

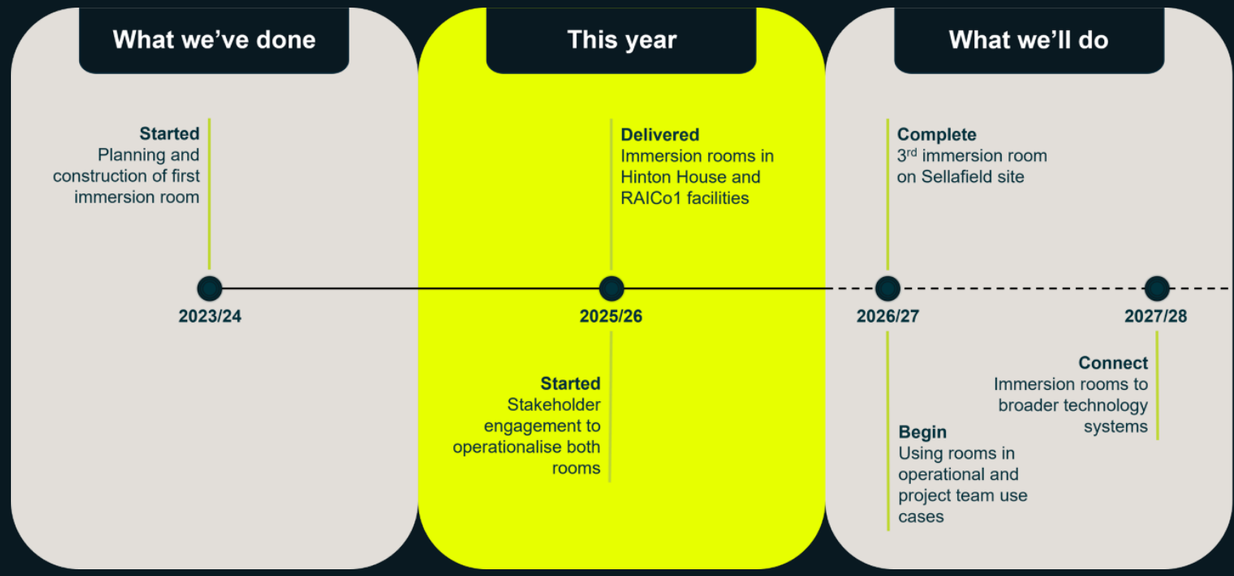
As we develop the concept of Integrated Systems in our business via Industry X, we are also preparing for the capability it will bring to plan and deliver work taking place in hazardous and difficult to access facilities from remote locations.

This year, we marked a significant milestone on this journey by completing the build of 2 immersion rooms in our Hinton House office in Risley, and our RAICo1 facility in Whitehaven. Virtual spaces like these will revolutionalise how we work; from improving how we train and familiarise operators prior to entering facilities, to avoiding the need for operators to enter hazardous environments by performing operations remotely, to enabling project teams in multiple locations to review project data together in real time without having to physically travel to one another. The benefits on offer are substantial.

Now we have the first 2 immersion rooms built and operational, we are planning a 3rd located on the Sellafield site itself to expand this capability to the heart of our business. We have already started operationalising these rooms, which we look forward to showing you in future Annual Reviews.



Designed to accommodate 10-20 users, the 360-degree visual environments allow engineers, operators and project teams to see and control what is happening on the Sellafield site, collaborate across different locations in real-time, and step inside digital versions of facilities before work begins.



7
Sellafield Ltd locations in the North-West

6 hours
Site - Risley travelling time avoided per person per trip

40%
Reduction in time spent in hazardous environments

Delivery groups

- CRAI Programme
- Facilities Management
- ISO

External partners

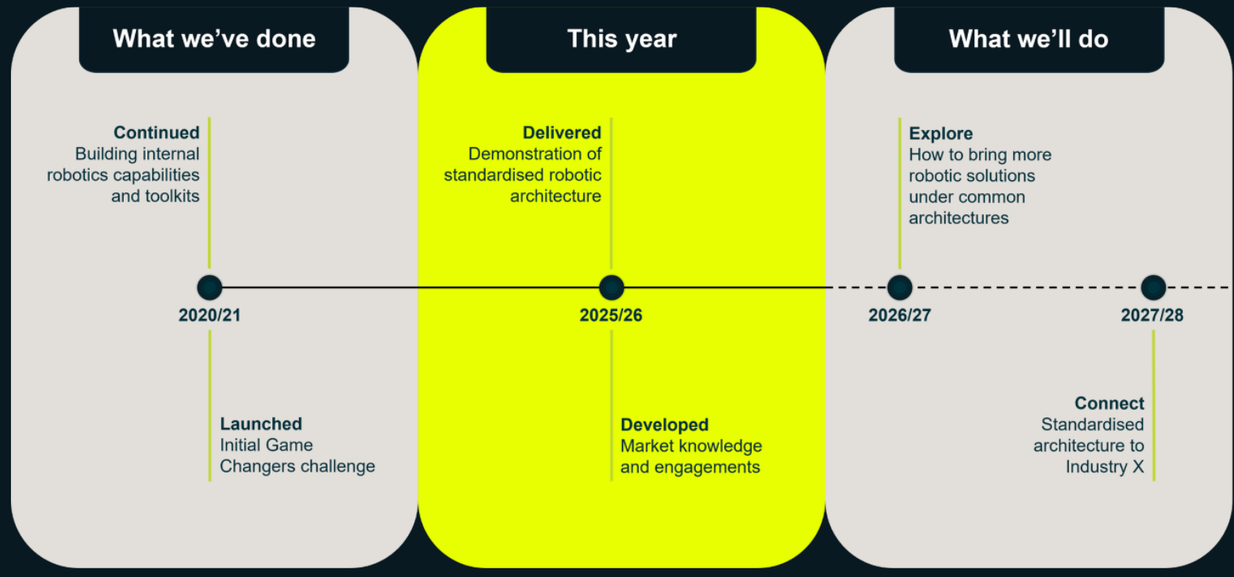
- AtkinsRéalis
- Igloo Vision

Value framework alignment

Standardised robotic architecture

Over recent years, we have shown the growing impact robotics is having and will continue to have on our mission. Currently, robots are often operated via different programming languages. For different robotic technologies to work together seamlessly as part of integrated systems like Industry X, we will need a standardised control architecture.

This year, using our Game Changers open innovation programme, we conducted a demonstration of a standardised robotic architecture, which allowed solutions like CARMA 2 and SPOT - both of which have been featured in previous Annual Reviews - to autonomously work together to monitor the floor and walls of a room for contamination: a task they would be unable to achieve alone.



With the learning from this demonstration, we will continue to explore how we can incorporate more solutions into common architectures like this. In future, this will allow concepts like Industry X to incorporate multiple robotic solutions capable of performing multiple different tasks.



With standardised architecture in place, we will be able to deploy robotic 'plug and play' systems capable of operating different robotic solutions like CARMA 2 (L) and SPOT (R). They would be able to communicate with each other to autonomously achieve more complex sequences of tasks.

2
Platforms demonstrated

50%
Reduction in integration costs

£1m
Potential saving per deployment

Delivery groups

- Remediation
- RTG
- CRAI Programme
- Game Changers[2]

External partners

- UKAEA
- Createc
- FIS360
- UKNNL

Value framework alignment



Appendix



Appendices

- Glossary and references
- Featured suppliers
- Deployed innovations

Glossary

AAD	Alpha Active Demonstrator
AI	Artificial Intelligence
CoE	Centre of Expertise
LLM	Large Language Model
NDA	Nuclear Decommissioning Authority
R&D	Research & Development
RD&I	Research, Development & Innovation
RrOBO	Risk Reduction of Glove Box Operations
SIXEP	Site Ion Exchange Effluent Plant
SPRS	Sellafield Product Residue Store
SNM	Special Nuclear Material

References

1. NDA Value Framework
https://www.gov.uk/government/publications/nda-value-framework-how-we-make-decisions

2. Game Changers open innovation programme
https://www.gamechangers.technology

3. Sellafield Ltd Areas of Research Interest
https://www.gov.uk/government/publications/sellafield-ltd-areas-of-research-interest-2024

4. How to do business with Sellafield Ltd
https://www.gov.uk/guidance/how-to-do-business-with-sellafield-ltd

5. Characteristics and occurrence of radioactive beach finds near Sellafield site
https://www.sciencedirect.com/science/article/pii/S0304389425021193?via%3Dihub

6. Sellafield Ltd Annual RD&I Review 2024/25
https://sellafield.pagetiger.com/beazlph/1

7. Sellafield Ltd Annual R&D Review 2021/22
https://assets.publishing.service.gov.uk/media/635273fb8fa8f554cb9dc2f2/SEL14347_ARDR_ACC.pdf

8. Sellafield Ltd AI Strategy
https://www.gov.uk/government/publications/sellafield-ltd-ai-strategy

Featured partners

The RD&I featured in this report is made possible via our vast network of talented organisations in the NDA Group, academia and the supply chain, who we are proud to work with in delivering such nationally significant work. Details of the organisations mentioned previously can be found below.

A2R Consortium	https://www.gov.uk/government/news/sellafield-ltd-awards-high-hazard-risk-reduction-framework-contract
AtkinsRéalis	https://www.atkinsrealis.com/
Createc	https://createc.co.uk/
Cyan Tec	https://cyan-tec.com/
Design Driven Solutions	https://designdrivensolutions.co.uk/
FIS360	https://fis360.com/
Hoppa	https://hoppa.ai/
Ice9 Robotics	https://ice9robotics.co.uk/
Igloo Vision	https://www.igloovision.com/
Microsoft	https://www.microsoft.com/en-gb
NDA	https://www.gov.uk/government/organisations/nuclear-decommissioning-authority
NDC	https://www.ukndc.com/
Sensor Driven	https://www.sensordriven.com/
UK Atomic Energy Authority	https://www.ukaea.org/
UKNNL	https://uknnl.com/
University of Aberdeen	https://www.abdn.ac.uk/
University of Highlands & Islands	https://www.uhi.ac.uk/en/
University of Manchester	https://www.manchester.ac.uk/
NRS	https://www.gov.uk/government/organisations/nuclear-restoration-services
Oxford Robotics Institute	https://ori.ox.ac.uk/
Taylor Knightly Engineering	https://www.tke.co.uk/

Deployed innovations

2025/26 marked another successful year for the site in deploying new innovations. Once again, we surpassed the NDA's target to deploy and demonstrate over 40 innovations over the course of the year. Details on all of these can be found below.

Engineering & Maintenance	Autonomous surveys
Special Nuclear Materials	Smart Sensor SPRS Gelsight
Retrievals	SSB transfer of spent fuel from FGMSP to ISF Hydrogen generation equations for aluminium encaps Fibreboard transport package MEME implementation Fuel on the move
Spent Fuel Management	Camdroid Line 3 pour rate quality case Glass removal from quarantined HLW containers
Central Technical	Sellafield Ltd exhibition Utilities data management Benefits management app
Services	Safe charging of Li ion batteries Fuel cell lighting
Remediation	Enhanced communications Pack it in - Chemicals innovation Introduction of modular safety cases CARMA2 Decommissioning of ground water monitoring wells SWPF characterisation Groundwater field survey application People accelerating decommissioning Characterisation hub EDS assay suite
People function	T-Level replacement scheme
SABA	SABA skills week
Safety	Safety case academy

Continues on next page

Deployed innovations

Continued

Information Services Organisation	Copilot devices DAR power apps Defender for endpoint Enterprise booking single sign-on Exchange online GBS portal InTune Learning Management System Powerpages proof of concept Reference architecture collaboration PageTiger for digital communications PSTN replacement Site WiFi Transcribe Viva Engage Weather app