

News story: Robots compete in nuclear decommissioning challenge

An array of robots controlled by super-smart auto-navigation systems are doing battle in an £8.5 million competition to develop new ways of tackling some of Sellafield's most radioactive hotspots.

Last year, the Nuclear Decommissioning Authority (NDA) and fellow government agency Innovate UK launched a search for innovative technologies that could be combined into a single seamless process for use in facilities that will soon embark on a major decommissioning journey.

Working closely with Sellafield Ltd, who would use the technology, submissions to a competitive process were invited from all industrial sectors.

Five promising ideas have now made it through to the final stages after being whittled down from a shortlist of 15. The newly formed consortia are each set to receive up to £1.5 million to build prototype demonstrators for testing in a simulated radioactive environment.

Conventional approaches to working in high-hazard environments involve teams of workers, clad in protective air-fed suits, who would be restricted to working no more than a few hours at a time. The process is extremely time-consuming, costly and poses risks to the workers.

The Thermal Oxide Reprocessing Plant must be cleaned out and decommissioned

The goal of Sellafield and the NDA is to reduce risks to workers, increase productivity, deal efficiently with waste, reduce timescales and cut overall costs to the taxpayer: safer, faster, cheaper. This is complemented by the role of Innovate UK who are looking to drive productivity and growth in the UK through the support and implementation of innovation.

Announcing the projects, the NDA's Head of Technology Melanie Brownridge said the response from suppliers and academic institutions had been so promising, that more funds were added to top up the original £3 million pot increasing it to £8.5 million:

We were all incredibly excited by the quality and diversity of the submissions, which came from established nuclear organisations as well as industries, such as space and defence sectors, working with us for the first time. Such a fantastic response meant that we were able to secure additional funding from Innovate UK and the Government's department of Business Energy and Industrial Strategy (BEIS) which will allow more of the ideas to be fully explored and also investigated for potential use in other hazardous environments. The projects demonstrate the full range of innovation – using existing ideas in an innovative way through to cutting-edge

new technologies.

All the projects are being developed by collaborative consortia formed specifically for this competition. The participating organisations, almost 30 in total, include small businesses, large corporations and academic institutions.

The winning project – or projects – could be put to work at Sellafield's Thermal Oxide Reprocessing Plant (THORP) and Magnox Reprocessing Plant, which are both due to close by 2020. After closure, scores of rooms, or 'cells', at the facilities must be cleaned out, with the waste safely treated for packing and storage.

Melanie added:

It's a huge challenge. . The new integrated system must establish what's inside the cells, measure the radioactivity, access spaces that have been sealed for years, cut up the contents (including large vessels and many miles of pipework), segregate the waste, then remove it for treatment and safe storage. Radioactivity levels are extremely high, restricting workforce access, so the work must be carried out remotely.

A number of the technologies are tried and tested nuclear favourites; some are well established in other industries; others are brand new. One of the challenges will be to develop a smooth interaction between all the different component parts.

Industries that have been keen to step up to the challenge include computer gaming, fume extraction, sea-fishing, medical imaging, oil and gas as well as space and defence.

Many ideas include robots which range from large industrial giants to small ant-like devices that can work collectively and easily be replaced in the event of a break-down.

One of the auto-mapping systems was developed for use in missions to Mars and will be adapted to scan the interior of a radioactive cell.

The projects include technology developed for space missions to Mars

Some projects will immerse operatives in a virtual world, where they will intuitively be able to control robots and equipment as if they were actually inside the cells. Melanie added:

The NDA is continually seeking the best ways to encourage innovation and bring in new ideas from the supply chain and ensure everyone has an opportunity to contribute. Part of our mission is to support innovation and technology growth, with the aim of

pushing forward the decommissioning of extremely complex nuclear challenges.

Derek Allen, Innovation Lead for Energy at Innovate UK, said:

We have been delighted by the response to this competition and the additional funding will enable us to support more innovative organisations with great ideas to make nuclear decommissioning cheaper, safer and faster.

This has the potential to open up significant business opportunities for UK organisations both nationally and globally.

This programme fully aligns with one of the Governments Industrial Strategy Challenge Fund priority areas: 'Robotics and artificial intelligence in extreme environments' which is looking to create a safer working world for people, improve productivity and support advances in industry and public services.

After the first series of trials, set to take place over the next 18 months, those with potential could progress to more rigorous trials in a radioactive environment. Approval from the nuclear regulators will be required before the integrated system can be deployed at Sellafield or other NDA sites.

Melanie added:

We're hopeful that a number may be successful, and could be used in various different situations at our sites as well as in other hazardous scenarios, both here and overseas.

More on the projects and how they are developing will be released over the next 12 months including articles from each consortium.

The five successful projects are (lead contractor in bold):

Barrnon Ltd

Atkins, Cambrian Intelligence Ltd, Createc Ltd, Veolia (Oxford Technologies)

Createc Ltd

OC Robotics, Red Engineering Design Ltd, Structure Vision Ltd, React Engineering Ltd, UKEA, Race Ltd

Wood

Airbus Defence & Space Ltd, Damavan Imaging, Clicks & Links Ltd, TWI, Digital Concepts Engineering Ltd, IS Instruments Ltd, i3D Robotics Ltd, University of Lancaster, University of Salford, Kawasaki

Cavendish Nuclear

Babcock Analytic Solutions, OC Robotics

Nuvia

Clicks & Links Ltd, Hu-Tech Ltd, Imitec Ltd, PaR Systems Ltd, UKEA RACE Ltd, University of Bristol, University of Manchester

[Integrated Innovation Competition project details](#) (PDF, 391KB, 9 pages)

[Read more about the background in a blog by the NDA's Melanie Brownridge](#)

[News story: Clare Lombardelli appointed as Chief Economic Advisor](#)

Clare Lombardelli has been appointed as the new Director General, Economics and Chief Economic Advisor to the Treasury, replacing Sir David Ramsden who [joined the Bank of England in September 2017](#). She will take up the role on 3 April.

About Clare Lombardelli

Clare is currently the Director of Strategy, Planning and Budget at HM Treasury where she is the lead advisor to the Chancellor on fiscal events, and is a member of the Treasury's Executive Management Board. She holds a master's degree from the London School of Economics, and is a Visiting Research Fellow at King's College London.

Clare has worked in government since 2005, after starting her career as an economist at the Bank of England. Her roles have included Principal Private Secretary to the Chancellor of the Exchequer, Private Secretary for Economic Affairs to the Prime Minister, and Deputy Director for Labour Market Policy. She has also worked as a technical advisor for the International Monetary Fund.

About the role

The Chief Economic Advisor works to deliver the government's macroeconomic objectives, promoting sustainable economic growth and setting and

implementing fiscal policy. The post-holder manages the Economics and Fiscal Groups in Treasury, sits on the Executive Management Board of HM Treasury and is co-head of the Government Economic Service.

News story: UK Space Agency announces new funding for industry

The UK has a thriving space industry. Credit: Airbus.

The grants of €200,000 have been organised by the UK Space Agency and European Space Agency as a new way of applying for funding for technology developments under ESA's General Support Technology Programme (GSTP) which has existed for nearly 25 years.

Dr Graham Turnock, Chief Executive at the UK Space Agency, said:

"The GSTP has proven to be a successful way of building know-how and capabilities in the industry and this latest funding will help keep the UK at the forefront of technological innovation.

"The Government's recently published Industrial Strategy set out a clear vision for the UK to become the world's most innovative nation and we are working with industry to capture 10% of the global space market by 2030."

This new route to GSTP funding allows those interested in the programme to propose a project for development in their area of interest directly to UK Space Agency and ESA. In turn the Agency will be able to fund some of these new ideas straight away, and it is hoped continue discussion on other promising ideas with a view to future development.

The UK Space Agency has invested 35 million euros in the current 3-year phase of the GSTP, which aims to convert promising engineering concepts into a broad range of products – everything from individual components up to complete satellites and satellite applications. The only area of technology it does not cover is that related to telecoms, which are covered in other ESA programmes.

The new funding is aimed at smaller 'entry level' projects, in both upstream and downstream, capable of de-risking technologies.

The funding opportunity is in addition to existing GSTP project opportunities and activity in the UK, and does not affect other engagement with the programme.

For more information on how to apply, download the call documents below.

PDF, 203KB, 2 pages

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[News story: Do's and don'ts of completing an application to incorporate a CIC](#)

Do's and don'ts of completing an application to incorporate a CIC

Need help with registering your Community Interest Company? We've identified the most common mistakes for each document you need to submit and compiled a

list of Hints and Tips to get you on your way.

These are the forms you need:

Send the documents by post to Companies House with the £35 filing fee.

The form IN01

Do

- check that the company name you want is available by using [Companies House Webcheck](#)
- make sure the company has the name ending CIC, Community Interest Company or C.I.C. and is consistent on all forms
- tick the correct box in A4 – ensure the box you tick is relevant to the type of articles of association that you are sending.
- complete Part 5 – give details of the person(s) that will have significant control over the company (PSC). If there will be no PSC in relation to the company still tell us by ticking the correct box.
- tick L1 – consent statement – to tell us that the subscribers confirm that the people named as a director or secretary have agreed to act in that capacity.
- make sure that all the CICs subscribers sign part N1 individually OR if the CIC is being represented by an agent, complete section N2
- will you have more than 2 directors? Then download the IN01 [continuation sheet](#)
- contact Companies House with any [queries](#) on the IN01

Don't

- Tick box A3 – although your company name will end in CIC, Community interest Company or C.I.C. this does not mean that your company is exempt from using the word 'limited'.

The form CIC36

Remember your community Interest Statement (CIC36 form) and keep the name consistent with the other documents.

Do

- complete each section of the form – A, B, C and D
- give a clear description of the community of benefit – A
- give a clear description of the CICs activities and how these will benefit the community – B
- complete the 'surplus statement' on the end of section B
- read section C – these are the declarations which are mandatory. You sign section D to confirm your understanding
- make sure that the number of directors that have signed section D are the same number of directors named in the form IN01

Don't

- apply to be a CIC if your main activity will be lobbying or campaigning for or against any local or national political party or government decision
- state in the surplus statement that the CIC will pay dividends to shareholders if the CIC will be [limited by guarantee](#) or limited by [shares Schedule 2](#)

The Memorandum of Association

Do

- make sure you use the correct memorandum of association for the type of company you have chosen i.e. limited by guarantee or limited by shares
- make sure all the directors named in the form IN01 have signed and dated the document

Don't

- Use separate forms for each person's signature, all signatures must be on one Memorandum

The Articles of Association

Do

- make sure the asset locked body clauses are numbered correctly and correspond with the conditions.
- choose a registered charity, another CIC or a Registered Society as your nominated asset locked body in clause 3.5
- choose the correct limited by shares model – Schedule 2 to pay dividends to asset locked bodies or Schedule 3 – to pay dividends to shareholders
- choose the correct Articles of Association for the type of company you have chosen i.e. limited by guarantee or limited by shares
- complete the objects clause – the Regulator considers it to be good practice for the CIC to complete the objects clause in the articles and some funding bodies refer to this information when considering an application – however it is not mandatory

Don't

- nominate your CIC or a director of your CIC as the asset locked body in clause 3.5
- remove or alter any of the statutory clauses shown in red in our models
- make any additional clauses that will negate the meaning of the statutory clauses

Contacts

- email or telephone the CIC office if you have any questions on the CIC36 form or Articles of Association
- email or telephone Companies House if your questions relate to the IN01 or Memorandum

Do let us know what you think cicregulator@companieshouse.gov.uk

Don't think any question isn't worth asking.

Press release: Dean of Liverpool nominated: 31 January 2018

The Queen has approved the nomination of the Reverend Canon Susan Helen Jones, BEd, MPhil, PhD, Residentiary Canon at Derby Cathedral and Director of Mission and Ministry in the Diocese of Derby, to be appointed to the Deanery of the Cathedral Church of Christ, Liverpool, on the elevation of the Very Reverend Peter Jonathan Wilcox, MA, DPhil as Bishop of Sheffield on 23 September 2017.