



# How smart solutions can make the world more sustainable



The reliance on digital technology in our everyday lives continues to grow at an incredible rate. The increasing variety and application of these technologies is enabling us all to perform an increasingly diverse range of tasks in this increasingly connected world. These technologies can play a pivotal role in slowing down the effects of climate change and make the world more sustainable.

The climate change challenge we face is monumental. There is now more carbon dioxide in the atmosphere than there has ever been in at least the past 2 million years. It is unequivocally the case that human activity has become the leading cause of climate change, increasing the volume of greenhouse gases in our atmosphere—the burning of fossil fuels, deforestation, agriculture and cement production being our most significant contributors.

Governments of the world are united in their efforts to address this supra-national issue, and make the necessary behavioural and societal transformations. Through its Conference of the Parties (COP) meetings, the United Nations is driving momentum into targets and timelines, and there is a growing sense that this policy ambition is increasingly non-discretionary. As a result, legislation is changing and aggressive targets are being put in place.

**Our purpose is to make the world more sustainable by building trust in society through innovation.**

## Sustainable development in a digital society

At Fujitsu, our purpose is to make the world more sustainable by building trust in society through innovation. Unless we act, nothing will change. We need bold, radical action, which is why Fujitsu is embracing the UK government's social value model, creating a fairer, more sustainable society.

The use of smart digital technologies will have an increasingly critical role to play on this journey to achieve net zero emissions by 2050 (NZ50). Through the application of Digital Twin, Fujitsu makes sense of relevant data, often in 'stove-pipe' systems with disparate suppliers and integrates that data to inform decision-making, the basic components comprising:

- Sensors and data
- Analytics and interpretation
- Systems integration.

## Innovative ideas and solutions to real-world problems

By employing the necessary Digital Twin, Artificial Intelligence (AI), data mining and machine learning technologies, we can help to describe the ecosystem, identify usable data and understand its relevance to innovative ideas and solutions to real-world problems, such as the climate change emergency. With the increasing complexity of smart digital technology, the volume of data collected and available for analysis continues to increase exponentially.

These data sources are also becoming increasingly varied and complex. So, knowing which sources to interrogate and how to process the data quickly and accurately is a critical challenge for decision-makers. Digital Twin aids definition of the data sources (systems, sensors and services) with AI and advanced analytics technologies delivering accurate and meaningful insight.

The potential applications of such smart technology are many and varied, including environmental monitoring, managing utilities and optimising energy efficiency, to name just three. And the potential benefits to the MOD are significant:

- **Net negative estate** – a net negative MOD estate that has increased energy and vehicle fuel resilience through over-generation of renewable energy and carbon offsetting, enabling an ability to operate off-grid at home and when deployed
- **Net zero aviation** – an operation that has enhanced capability and minimised air, aviation and space emissions through innovative, energy-informed solutions
- **Net zero as business as usual (BAU)** – a MOD that is NZ connected across the whole force with technology, data and innovative thinking, has evolved its behaviours, culture, ethos, procedures, financing and commercial models, makes energy-informed decisions and has fully transitioned NZ activity to BAU.





## Smart city ecosystem

Taking the concept of smart technology one step further, we can envisage a future where smart sensors are connected and integrated throughout society, in the development of a smart city ecosystem.

This concept builds on one of the United Nations' Sustainable Development Goals—Sustainable Cities and Communities. Smart cities evolve as a consequence of the interoperability of technology and social, economic and political enablers, each of which play a critical element in the transformation of a city to 'smart' status.

Fujitsu has a pedigree of products and services capability via its Human-Centric Innovations framework to enable cities to transform into being smart. And we can apply this idea of smart cities to the military environment, where military bases become interconnected by smart technology to develop a smart base network or ecosystem.

## Fujitsu contributes to the development of trusted data flows and smart city operating systems



Energy

Environment

Education

Mobility

Administrative  
services

Health

Disaster  
prevention

## Shaping ecosystems through connecting people, data and services

### Digital trust

Fujitsu has developed a Trust-as-a-Service (TaaS) technology that ensures that authenticity of data. We are now collaborating with partners to implement this technology.

### Energy

Fujitsu is promoting distributed Virtual Power Plants (VPP) to expand the use of renewable energy and realise a decarbonised society.

### Environment

Proventia is using Fujitsu IoT technology to provide a solution that collects and analyses real-time data on vehicles' CO<sub>2</sub> emissions. The solution is already in use with a public bus network in London.

### Fujitsu city

In Osaki-Kamijima Town, Hiroshima Prefecture, Fujitsu conducted a proof of concept to develop a new transportation and distribution infrastructure for isolated islands. The project, which uses on-demand transportation technology and self-driving vehicles, aims to support elderly residents who have difficulty in driving.

### Isle of Wight

On the Isle of Wight, Fujitsu conducted of proof-of-concept focusing on transportation and greenhouse gas emissions. Working with local government, transport sector organisations and the National Digital Twin programme, Fujitsu has employed our Social Digital Twin technology to connect systems, sensors and data to enables real-world visualisation of transport across the island and the evaluation of emissions reduction measures through digital rehearsal.

### Smart base

Our smart base proof-of-concept is outcomes-driven focusing on the relevant activities, processes and resources to drive efficient and sustainable operations. The current proof-of-concept focuses on greenhouse gas emissions associated with a military base, providing a real-time visualisation of emissions and the contributing factors together with the ability to evaluate emissions reduction measures.

# Our vision is the sustainable integration of people and machines to revolutionise all aspects of operations.



## Why Fujitsu in Defence & National Security?

Our world is being disrupted. But together with you, Fujitsu's ambition is to build a brighter, more sustainable future for us all.

We want to work together to navigate this digital disruption collaboratively and explore solutions to the evolving threats we face today. Together, we can exploit technology that will drive high-impact improvement, transform our digital future and help to make us more sustainable in every way.

We can do this by harnessing technologies such as AI, machine learning, digital twin, quantum and high-performance computing. Our vision uses the power of everyone, bringing together our integration capabilities and knowledge in managed services with cognitive and advanced technologies that will drive your digital transformation. By elevating people higher up the value chain allows the smartest ideas to emerge to tackle tomorrow's big challenges today—whatever they may be.

With our technological inspiration and business vision from Japan, we touch the lives of millions of people around the world every day. For over 60 years, we have been working at the highest levels of security demanded by militaries, governments and industry to ensure the UK's most critical infrastructure operates smoothly, 24/7.

We have continuously adapted to a changing world, and we will keep evolving to face the future threats and challenges. We are diverse, creative, talented and different.

We are committed to building new possibility for everyone. By connecting people, technology and ideas, we are making the world more sustainable by building trust in society through innovation.

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