



Dan Wicks is Senior Earth Observation Specialist with the Satellite Applications Catapult at Harwell, Didcot, Oxfordshire ([www.sa.catapult.org.uk](http://www.sa.catapult.org.uk))

# Satellite support for a smarter future

Dan Wicks explains how satellite technologies, applications and data are set to have a major impact as urbanisation and population pressures demand the ever-smarter planning and management of resources

By 2050, two-thirds of people across the world will live in towns and cities – a major change from 1950 when two thirds lived in rural areas. This shift to urbanisation presents a huge opportunity for satellite-based solutions that can be of far-reaching benefits to end-users, including government organisations, for a range of planning and management solutions.

The smart cities industry is expected to grow from its current value of US\$622 billion globally to \$1 trillion in 2019, and \$3.48 trillion by 2026. As part of this staggering growth during the next few years, the Satellite Applications Catapult will be promoting the value of satellites, ensuring their data and applications play a key role in this sector's expansion.

## The benefits of satellites

Within urban environments, satellites will play a pivotal role in supporting sustainability, mobility, connectivity, health and resilience. The three types of satellites – positioning, navigation and timing (PNT), Earth Observation and communications – all have a role to play in cities for applications that include urban planning, air quality monitoring, flood warning, remote healthcare and enhanced traffic management. Much of the required technology already exists, so the primary requirement is new business and service models.

We know that good quality data can lead to better planning for better management, ultimately resulting in citizens enjoying a better

quality of life, all round, including things like significantly better healthcare provision. According to McKinsey, half of sub-Saharan Africa's billion strong population will have internet access by 2025, with more than 360 million people owning smartphones. This presents a huge opportunity in terms of available data generated by mobile phone usage, which, when combined with the power of satellite data, can ultimately play a crucial role in urban planning.

## Adopting a collaborative approach

At the Catapult, we are tasked with bringing together diverse stakeholders, while our broad technical expertise and facilities can be used to test and develop future solutions. Our team focused on satellite-enabled cities supports the vision of data-enabled, proactive decision making in cities.

Satellites offer a unique opportunity to enhance urban living. With this in mind, we want to ensure that this technology is a recognised viable solution within the smart cities industry. This will be achieved by forming key partnerships and implementing a series of market-led projects that enable industry to rapidly prototype and commission new services and applications, working closely with end-user communities.

Our focus will be facilitating the integration of satellite technologies into the planning, monitoring and management of cities, and development of sustainable applications and services that work better for cities and their citizens.

## What next?

Since one of the Catapult's core objectives is to actively develop a UK ecosystem featuring stakeholders from across industry, academia and government, we welcome opportunities to engage with new organisations that have an interest in smart cities. We are working to identify how satellite applications and services can be integrated into everyday life to increase capacity, efficiency and growth in urban areas, and are already working on projects relating to healthy living, city resilience and ecosystem services.

This includes helping companies develop innovative solutions and bring them to market, as well as looking at how service data could be commercially exploited by local government. On a global scale, we plan to use our expertise and neutral role to link into international future cities initiatives, and are working in particular with the Future Cities Catapult.



Extract from Sentinel-2A image of Paris, France, acquired 15th March 2016. Data © ESA. Image © Satellite Applications Catapult Ltd