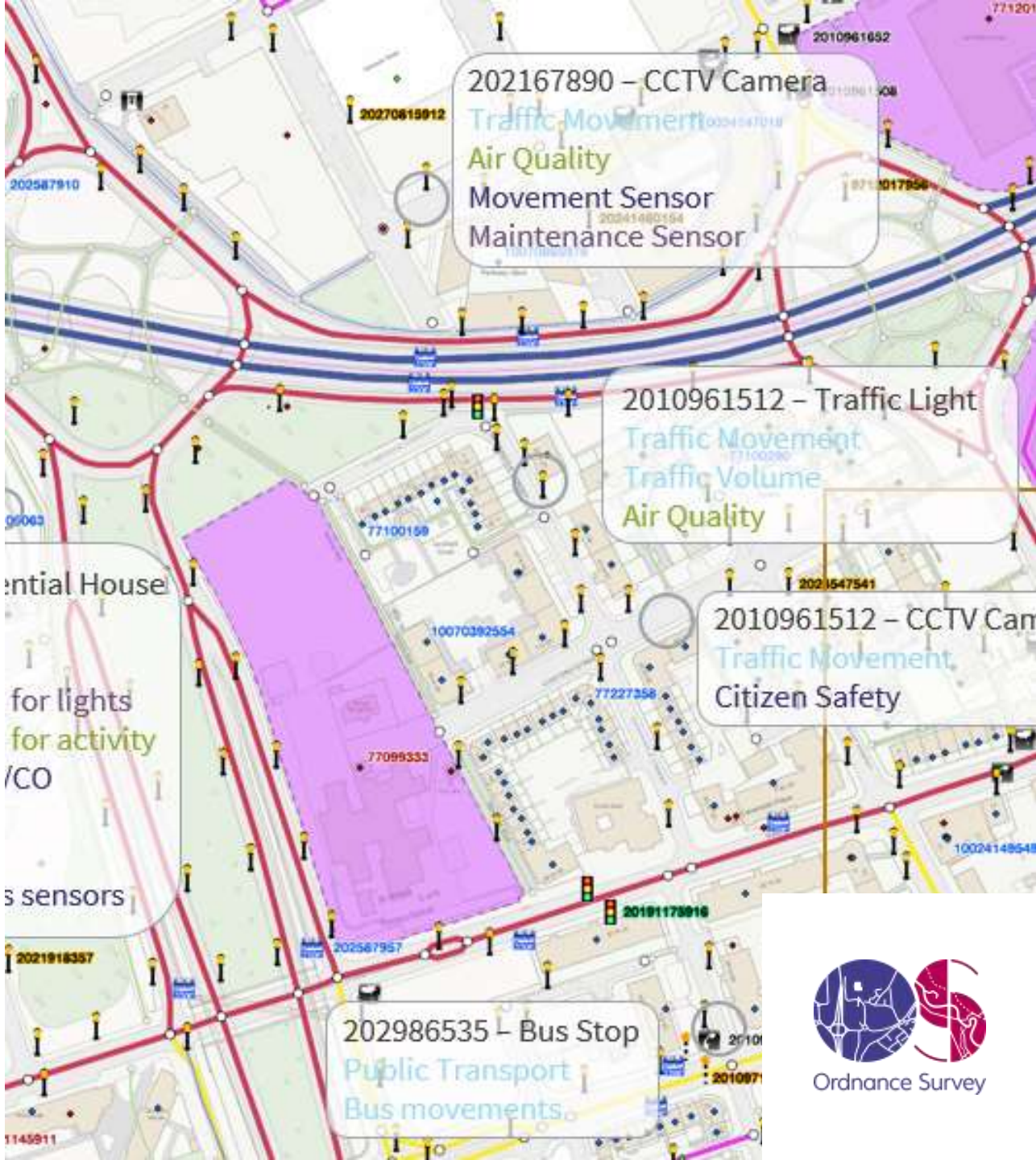
Towards a Digital Built Britain and beyond

Ordnance Survey

OS and DBB

During this session we'll cover how we've supported **BIM Level 2**, and as the industry moves forward, share our vision for a **Digital Built Britain**, our role within that and an example of the projects we're working on today, including the use of our data to facilitate the link to BIM and content and data interoperability in **Smart and IoT.**



Simon Navin

Project Lead within the Smart Practice at Ordnance Survey
Coordinating and delivering OS's Smart/IoT sector projects
Working in geospatial industry since 1990
Land survey, mapping, environmental management, planning, design, architectural visualisation and construction sectors
RICS and ICES Chartered Surveyor / OS's representative for Survey4BIM

Ordnance Survey

The experts and the expertise
Details of every address, road, network, contour, building and fixed physical asset.

The data, the insights
Making almost **100,000+** updates every day to over **500+ million** physical features.

225 years experience
The world's most experienced geospatial intelligence organisation.

Trusted and respected worldwide
A domestic focus with international reach

We are in the business of change

Ordnance Survey

BIM Level 2

May 2011, UK Government publishes Construction Strategy aimed at reducing cost of public sector assets by up to 20% by **2016.**

HMG requires construction suppliers tendering for centrally-procured government projects to be working at **BIM Level 2.**

Fully **collaborative** 3D BIM (with all project and asset information, documentation and data being **electronic**).

Level 2 now being consolidated by **UK BIM Alliance**

BIM Building Information Modelling (BIM) Task Group

UK BIM ALLIANCE

BIM4 COMMUNITIES

bsi.

Department for Business, Energy & Industrial Strategy

Survey4BIM Building stronger, together

Ordnance Survey

BIM Level 2 - benefits

Public and private sector to encourage benefits including:
Reduction in CAPEX, delivery and operational costs
Reduced risk
Improved carbon performance
Predictable planning

These benefits can also be realised by private sector clients and projects through **early adoption** and sharing of **standards.**

Where do OS fit in?

We see **BIM** as a key component of **Smart environments** that need reliable, accurate location data to…

Enable the Internet of Things
Build sustainable infrastructure
Promote efficient end-to-end journeys
Underpin creation of connected citizens
Support stronger, efficient, resilient services
Improve creation of and access to a sustainable environment
Enhance the citizen experience

Enabling national
safety & security
for Government bodies

Enabling Government
as Great Britain's National Mapping Agency

Establishing policies as champions of
global standards
with OGC and National Authorities

Geovation Hub, encouraging **Geo start-ups** and innovation

Developing a
Digital Built Britain
To improve citizen experience

Working with Partners

OS and BIM

Done → Doing → Future

Level 0 BIM

OS Topographic data in **CAD** compatible forms (dxf, dwg, etc) in small, bite-sized chunks.

Backdrop mapping, contextual and used, predominately, for **feasibility** to feed into a planning application.

Solves the problem of **location and context**.

However - **not** using structured data, attribution or ability to link disparate data.

Ordnance Survey

OS and BIM

Done → Doing → Future

Level 1 BIM

Mapping for **terrain**

Topography with **building heights**

Supports pre-tendering, master planning and client engagement.

Solves problem of understanding of **“Z” dimension.**

Ordnance Survey

OS and BIM

Done → Doing → Future

Level 2 BIM

Stakeholder engagement across government, industry and standards

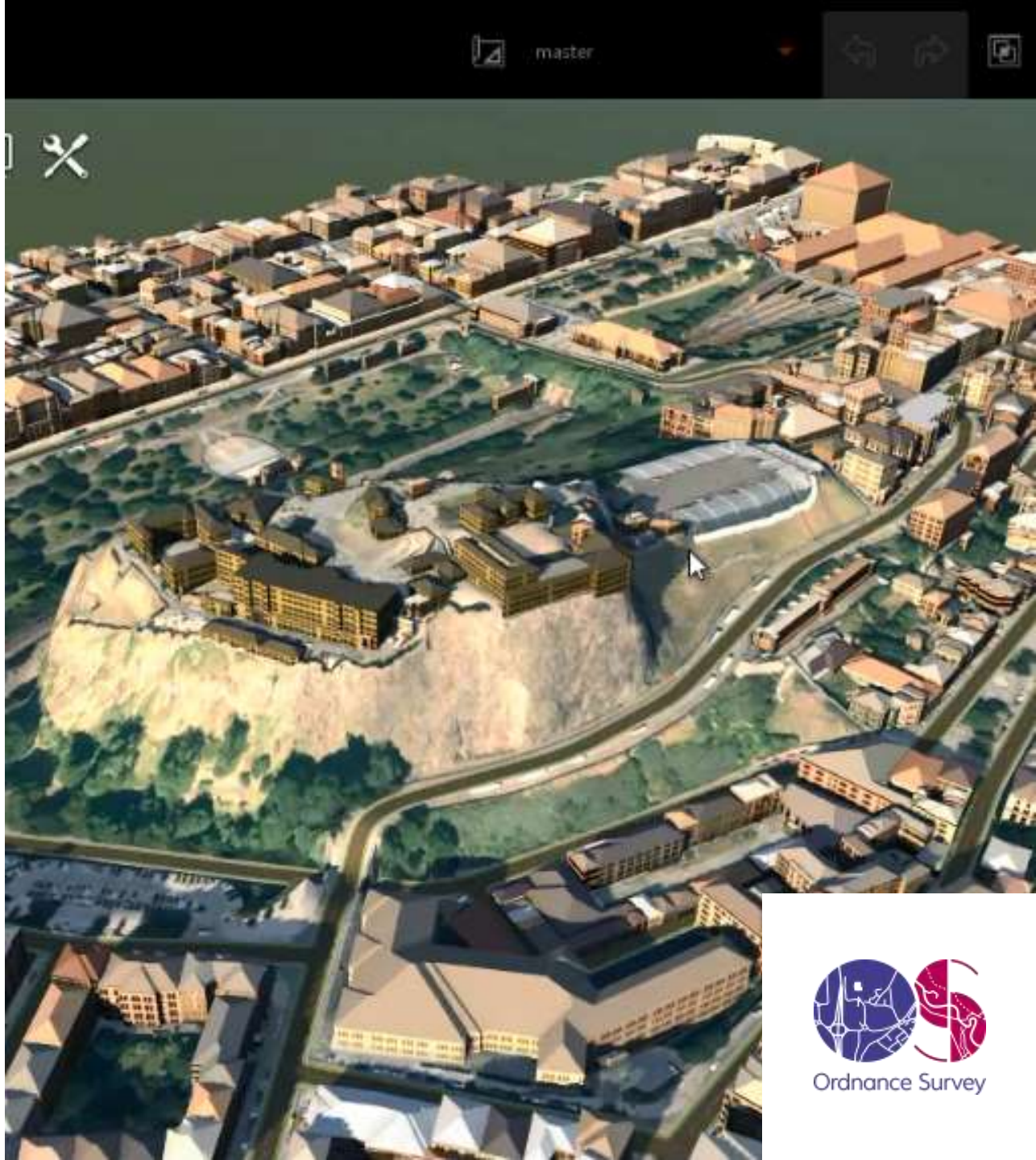
Towards full visualisation, virtualisation and simulation.

Developing **Geo Asset** Management tools.

Promoting **convergence** between GIS and CAD silos.

Streamed OS content direct into user platforms.

Improving **communication** of content.



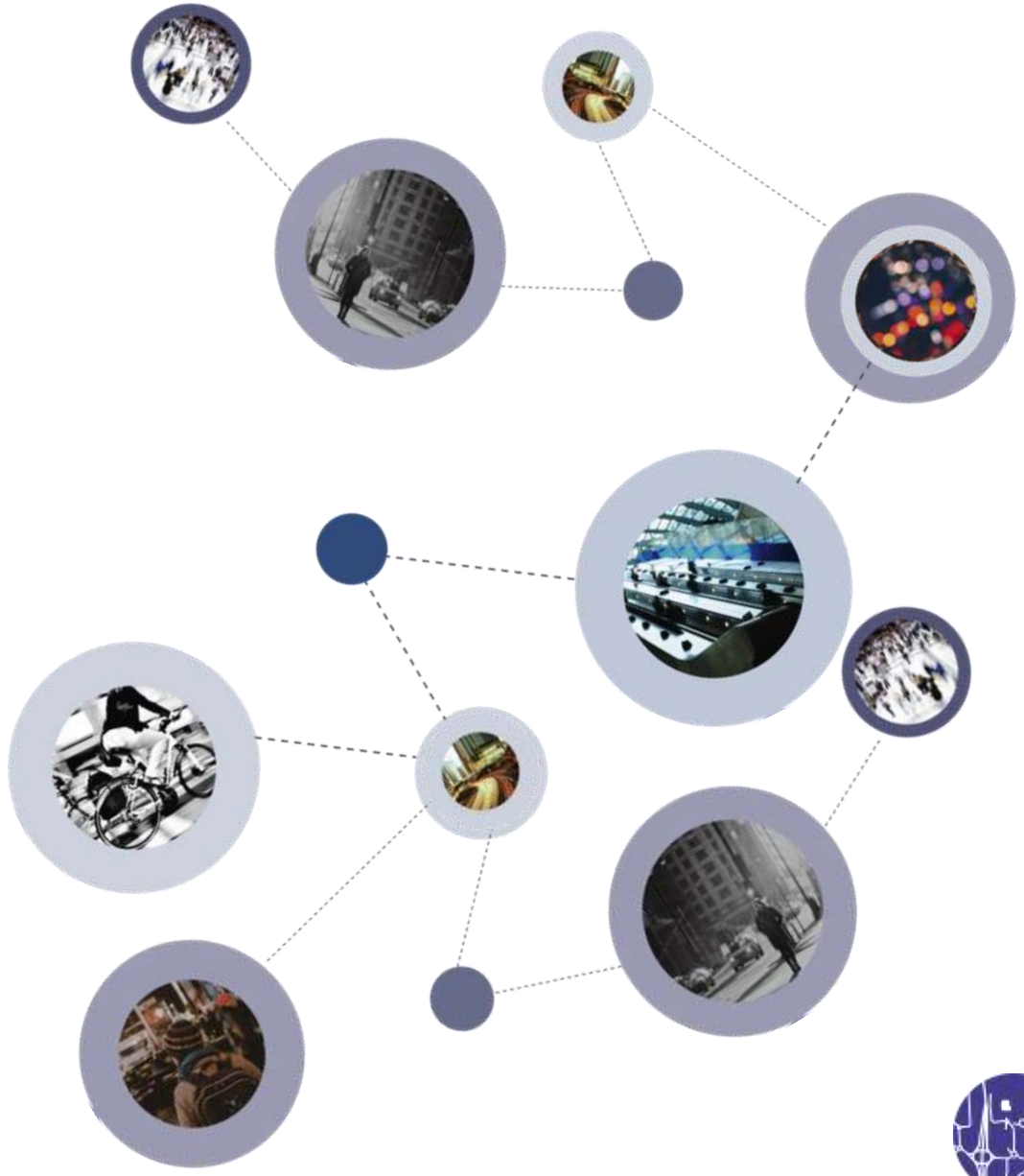
Ordnance Survey

Working smarter

Done → Doing → Future

Smart Pilots - exploring the case for new data content in the **built environment, subsurface, supporting place making**

Enabling new technology to be more cost effectively implemented, maintained and to deliver an improved customer experience; specifically 5G, IoT and CAV
New business models – e.g. City Data Exchanges, Mobility as a Service
Places need an understanding of what is available and where they are starting from. We are evolving **city smart** packages of services



Ordnance Survey

Future Cities Pilot

Done → Doing → Future

The Royal Borough of Greenwich, has agreed to participate as the UK **host city**, joining Paris, Milan, Barcelona and Lyon

Interoperability between city level and building level open standards
Provision of **better services** to citizens using shared data
Local and central govt. depts. sharing and **coordinating data** more effectively
Challenging silo mentalities in departments and groups
Developing insight and enabling more **effective decision making** with

OGC®
Making location count.

IGN
INSTITUT NATIONAL DE L'INFORMATION GÉOGRAPHIQUE ET FORESTIÈRE

Ajuntament de SantCugat

DIGITAL GREENWICH

Ordnance Survey

Atlas

Done → Doing → Future

Connected and Autonomous Vehicles feasibility study

Determine if mapping content is required to support autonomy and if so, the data model

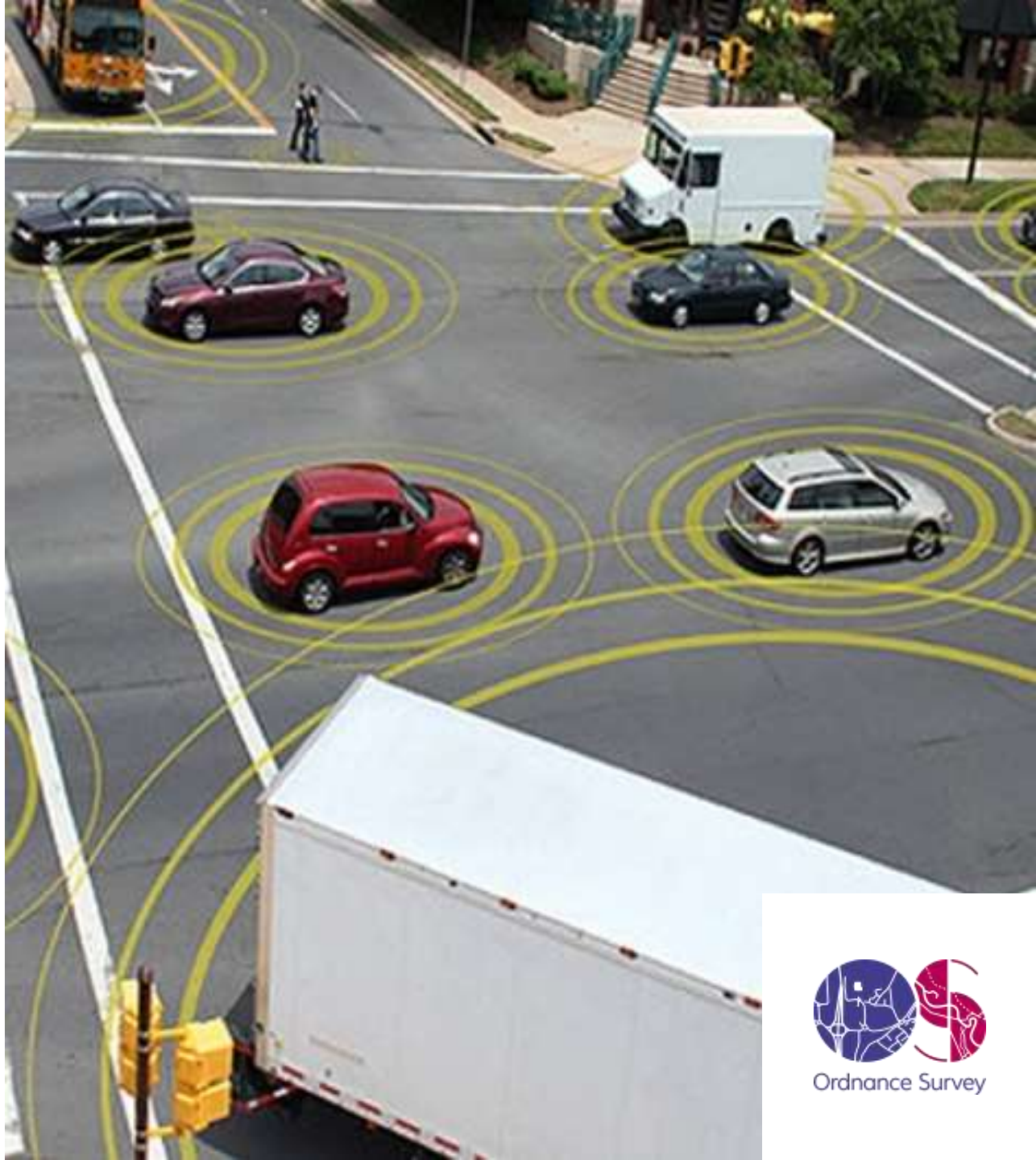
How best will data be **served and shared**

Cloud based?

Onboard?

Vehicle to vehicle?

Evaluating the **creation of mapping** from on-board technology



Ordnance Survey

CityVerve

Done → Doing → Future

IoT demonstrator, Innovate UK part-funded, 20 strong consortium MCC leading
24 months duration, from 1st July 2016

Ordnance Survey will provide the **geospatial glue**
Capturing new and **enhancing** existing content
API suite and **web services**
Research and analysis of content requirements, emerging technologies and systems
Geospatial platform of CityVerve activity, services and assets

Ordnance Survey

CityVerve

Done → Doing → Future

“Bottom-up” user-centric needs that help respond to global trends such as increased urban population and demand for public services

Function becoming as, or more important than form, means better data for the user;

Content discovery – what is the geospatial data of the future?

New ways to consume and share geospatial data - **HyperCat / Data Hub**

Greater resilience and s**calability**

More connectivity and a more accessible **sense of place**

cityverve

Manchester: the UK's demonstrator city for the Internet of Things.

Official partner, supported by Innovate UK and The Department for Culture, Media & Sport.

Ordnance Survey

OS and DBB

Done → Doing → Future

Level 3 BIM – **A Digital Built Britain**

Government-led national strategy

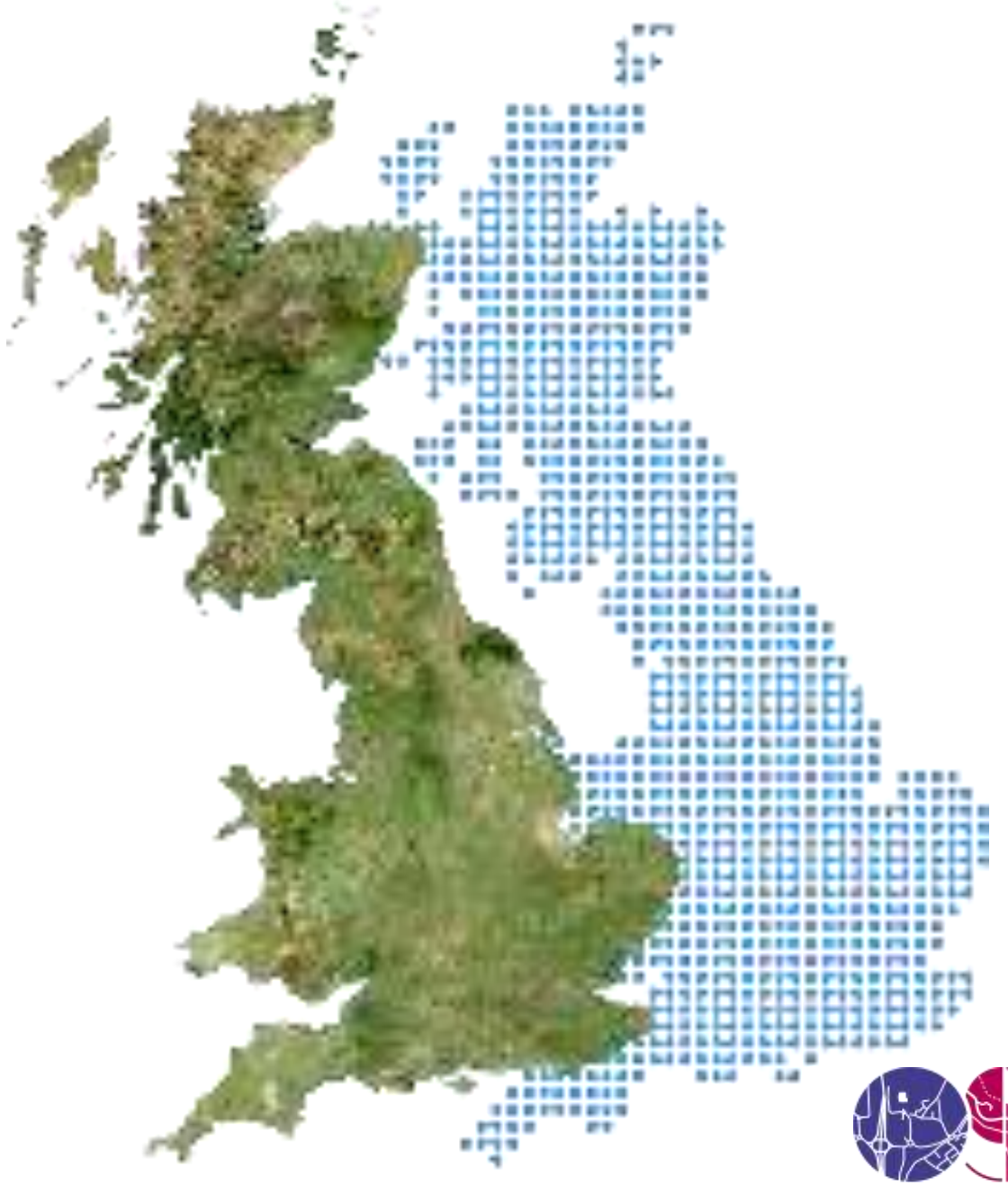
OS as **subject matter experts** for geospatial

A geospatial ecosystem of **connected** data and content.

Virtual design through merging the inside/ outside/above/below world

Underpinned by a **Real World Object Model**.

Supports and improves **connectivity and interoperability.**



Ordnance Survey

OS and DBB

Done → Doing → Future

Level 3 BIM – **A Digital Built Environment**

Reductions in whole-life asset costs
Greater **understanding** of environment
Improving productivity and capacity
Intelligent geodata
Real time and sensing technology
Secure data and information infrastructure.
Powering CAV, 5G, IoT, BIM

Ordnance Survey

Ordnance Survey

We’re at the heart of Smart

os.uk/smartcities

Simon Navin MRICS MCInstCES
Smart Practice
Simon.Navin@os.uk