geoplace®

Linking People to Places with Unique Identifiers

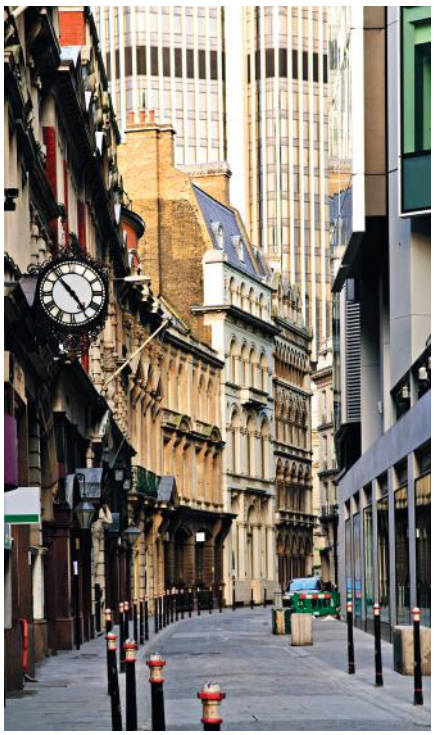
Ordnance Survey

Local Government Association

JAG United Kingdom

"The UPRN is the jewel at the heart of the addressing system. It links address data across a diverse range of systems and services. The UPRN facilitates greater accuracy and immediate data sharing and matching – delivering better services and better outcomes for citizens."

Rt Hon Matthew Hancock MP, speaking at the GeoPlace annual conference, April 2016



The Unique Property Reference Number (UPRN) is the unique identifier for every location with an address in the UK. It is allocated by local authorities who have the statutory authority to name and number every street and property and Ordnance Survey who identify objects on the landscape which may otherwise not attract an address. It provides a comprehensive, complete and consistent identifier throughout a property's life cycle – from planning permission and street naming and numbering through to demolition.

The UPRN is a key field within every record held in a council's Local Land and Property Gazetteer (LLPG), the council corporate address list.

The UPRN is available through Ordnance Survey's AddressBase range of products.

The Unique Street Reference Number (USRN) is the unique identifier for every street in the UK. The USRN exists within the NSG (The National Street Gazetteer) which is the definitive source of street information utilised in the notification of street and road works by statutory undertakers wishing to carry out work on or around streets in England and Wales. The USRN is a key field within every record held in a council's Local Street and Gazetteer (LSG), the council corporate list of every street within its boundary.

The USRN is available from the NSG and Ordnance Survey's OS MasterMap Highways Network product.

Using the UPRN and USRN

"I am now convinced that any public-sector organisation that wants to use data for better outcomes needs to connect together its spatial data - using UPRNs is an easy way to match records. There are amazing things you can do by matching records. If you don't have the UPRN you are making your life impossibly difficult to do it. The future of local government, the future of public services, the future of our communities depends on this - connecting data for better outcomes. For that you need UPRNs they are absolutely vital."

Eddie Copeland, Director of Government Innovation in the Innovation Lab at NESTA speaking at the GeoPlace annual conference in May 2017.

The unique identifiers: the UPRN and USRN are linking mechanisms that remove error in data exchange and communication, and deliver efficiency gains in operational processes.

In the same way that every citizen has a National Insurance number, every Internet-enabled device has an IP address and every book features an ISBN number, every addressable location has a UPRN and every street has a USRN.

These identifiers enable organisations to collate and share information based on a common reference, even if there are issues with other reference text associated with a record. Many technologies can be used to link and share data, including spreadsheets, databases, XML/GML schema and linked data – all of which can be underpinned by use of these unique identifiers for spatial address information in Great Britain.

Using the UPRN and or the USRN means that organisations can continue to hold their address and street information in their existing formats but, by adding a single field containing the UPRN or USRN, it becomes possible to link matching records in different databases together.

Where do the unique identifiers come from?

UPRN and USRN ranges are centrally allocated and managed by GeoPlace which provides each local authority with a range to allocate as needed.

Local authorities' statutory responsibilities mean that they are the source of information within a property's lifecycle and are responsible for assigning UPRNs and USRNs for each address and street record. Guidance given by GeoPlace to local authorities states that the identifiers should be entered against a record as soon as 'construction' begins or 'street naming and numbering' has been carried out, whichever is earliest.

Activities such as street naming and numbering, planning applications, building and environmental control, licensing, electoral registration, council tax and non-domestic ratings repeatedly bring local authorities in contact with land and property enabling thorough management of its lifecycle.

Return on investment

"In terms of building a business case for an investment in the LLPG, it is my conclusion that you can't build a successful transformation programme without building a strong foundation first and building a corporate approach to the LLPG is at the heart of that. Without creating a strong LLPG infrastructure and the resources to maintain it, every digital project that your council or your organisation works on so will be much harder to deliver."

Ben Jones, Head of Digital Services at Harrow Council, speaking at the GeoPlace conference in 2017.

In 2016, ConsultingWhere published a wide-ranging report 'Cost Benefit Analysis of Address and Street Data for Local Authorities and Emergency Services in England and Wales'. The report projected net benefits up to £202 million by 2020 from better use of the address and street data that councils create and maintain. Based on the current rates of adoption, this represents a Return on Investment after discounting of 4:1.

The research outlines the benefits afforded to local authorities in several areas including; reduced data duplication and integration, improved tax revenues, channel shift and route optimisation in waste management.

The UPRN in emergency response

"We have always maintained that Multi Agency Information Transfer (MAIT) in Wales utilises the UPRN as the key unique identifier. Information sharing using the UPRN is now in operation with the majority of Welsh Emergency Services and we are currently testing a similar approach in the exchange of data between Social Services and Emergency Services to undertake free Home Fire Safety Checks for vulnerable adults. My role has increasingly involved the Emergency Services in England and I am confident that within the near future, the use of the UPRN to underpin Emergency Service Command and Control Systems and as the unique identifier for wider public service information sharing, will be the norm not the exception. GeoPlace will be instrumental in achieving this."

Tony Bracey, MAIT Project Manager.

Every day the UK's emergency services deal with thousands of incidents of differing priority, urgency and complexity. Exchanging incidents between agency control rooms can be problematic without a way to unambiguously provide and validate location information from incidents.

Evidence from Wales suggests that for every four calls received from the public, the emergency services make three calls to their colleagues in other control rooms to relay information regarding incidents.

The Multi Agency Incident Transfer (MAIT) standard provides a solution to this problem by providing an agreed structure for the data elements that need to be shared between organisations.

The UPRN is used as the common identifier. The project has demonstrated that the UPRN, when used as a key reference identifier, facilitates effective and efficient public service information sharing resulting in tangible service provider benefits that ultimately lead to better outcomes for citizens.

Using the UPRN in public services

"Using the UPRN means that we can match records with greater success. The aim of the golden record is to cherry pick the best data from different sources and assemble a record based on what we believe is the best data we hold, and the UPRN is one of the top ones. It is also an essential tool for cleansing and de-duplicating data held in source systems. We are putting a huge effort into improving the quality of data across the organisation as this will lead us to being able to provide better services to our residents."

Sanja Milojevic, senior business analyst for Camden's Shared Digital Service with Islington and Haringey.

GeoPlace has collected over 200 case studies demonstrating the value councils' gain through using address and street data. It is clear that central government could likewise benefit from wider utilisation of the UPRN and USRN.

Broadband

The UK Government intends to introduce a broadband universal service obligation to give everyone a right to a decent broadband connection on reasonable request.

Ofcom, the telecoms regular for the UK provides advice to Government on how this might be achieved. Speaking at the GeoPlace annual conference in 2018, Andrew Button, Data Analysis Manager at Ofcom said "Rich datasets enhance our approach to UK wide policy. They allow us to undertake policy work analysis and it's the UPRN that is the key to unlocking those value in those large data sets and provide much better outcomes for our consumers".

JAG(UK), part of the GeoPlace family is working with the Department for Digital, Culture, Media & Sport (DCMS) and Department for Transport (DfT) to support the delivery of superfast broadband and local full fibre networks to the nation. Fibre to the premises (FTTP) is a key UK government aspiration and JAG (UK) is part of a group which is developing a fibre framework delivery document and is leading on driving innovation within the delivery chain. The NSG is an important dataset, providing detailed information on the road network, essential for operational planning.

Health and social care

Helping people live more independent, healthier lives for longer is a central task for Government. Understanding where people live, the health and social care provision accessible to them enables better planning and delivery of services.

Kent County Council are developing a linked dataset across hundreds of organisations to understand the true health and social care costs of people with complex needs and multiple chronic conditions. The UPRN is being used as an effective link between the different datasets at household level, alongside NHS Numbers to link data at person level, both pseudonymised.

This makes it possible to identify where data from different sources relates to an address, and thereby begin to identify any patterns, without revealing the identities of the relevant individuals. This is especially important given the data protection considerations when accessing and analysing person level datasets to assess population health risks and inequalities in health and care provision.

At the GeoPlace conference in 2018, Dr Abraham George, Consultant in Public Health, said the "The UPRN is a great asset in linking data from NHS, local authority and other sources to explore public health; and can provide the scope for innovation around the linkages."

Under the Wales Accord on the Sharing of Personal Information Framework, leaders of public services in Wales signed up to a collective commitment to identify and prioritise the response to vulnerable people during emergencies. JIGSO2 uses the UPRN to underpin electronic information exchange across the Responder Community.

The anonymity of the data using the UPRN to identify vulnerable people, property and infrastructure is a key contributor to the success of the project. The lack of personalised data facilitates a common willingness to share data amongst the stakeholders.

Data exchange at property or location level ensures that the project concentrates on data exchange mechanisms rather than the types of vulnerability, enabling data to be presented to users in a format that facilitates decision making.

Housing

Using the UPRN to understand land and property, existing housing and potential housing supply allows partners and agencies to makes more sense of assets.

Government has pledged to enable the building of 300,000 new homes a year, to counteract the short fall of homes in the country, whilst also protecting the greenbelt and build more homes on brownfield land. How can we ensure our green spaces are being protected? Do we know how many homes are built on brownfield land vs greenspace or on the green belt? How can we monitor land change?

Land classification data from Ordnance Survey, linked to UPRNs provides a way of monitoring changes to the natural and built environment and is a key part of the planning process, controlled by local authorities.

At a local level, using UPRNs helps to improve the standard of living in rented accommodation managed by councils. Councils such as Sefton are using UPRN linked records to identify properties needing landlords' attention, generate revenue streams promptly, and improve the quality of living for residents.

Whilst councils such as Denbighshire County Council use the UPRN to provide the authoritative link between landlords' properties and Energy Performance Certificate Data. As a result, Denbighshire has recently secured funding for £377,650 of improvements to those properties.

Busting traffic congestion

Street Manager is a project within the DfT which will transform the planning, management and communication of street and road works through open data and intelligent services to minimise disruption and improve journeys for the public.

Street Manager will be a new digital service that uses the range of products available to deliver transformational change. JAG(UK) sits on the project steering board and has long supported the need to change the processes around data management. NSG data and the USRN are essential in providing a 'single view of the street' which is required to deliver DfT's vision for day-today management and planning of street and road works, and modern requirements for data consistency, transparency and connectivity.

The census

Knowing the characteristics of the entire population is key for the development of public policy. The decennial census provides a snap-shot of all people and households in an area and has a direct bearing on the government support that councils receive to fund public services.

These population statistics provide consistent insights and contextual information for small areas and population groups, and highlight local need for services like schools, roads and hospitals. By knowing how many people live in an area, local authorities can identify the services and facilities communities need and make informed decisions.

A complete and accurate address information is critical to the success of the Census. The ONS is working with GeoPlace to ensure that the address list that ONS will use for the census is accurate, complete and informative.

Development of the digital economy and future technologies

UPRNs and USRNs and their geometries are crucial to our development of the digital economy.

UPRNs and USRNs are the identifiers which unlock addresses and street names – the information that users can remember – by making it possible to link them to the machine-readable data that the robots and drones can use. This is fundamental to the growth of location-based technologies such as drone deliveries, autonomous vehicles and other innovations.

GeoPlace and JAG(UK) is already working with the DfT and other agencies on the location of electrical car charging on the street network. The availability of a wide network of charge points is an important aspect of government policy in reducing carbon emissions and tackling air quality.

The GeoPlace vision

GeoPlace integrates and validates address data from local authorities and several national organisations to produce the AddressBase product set that is licensed to the market by Ordnance Survey.

Similarly, it brings together street data from 174 local highway authorities and four other national organisations to aggregate the National Street Gazetteer where the USRN is used to underpin the coordination of street works through a noticing application. This street data is an important part of OS MasterMap Highways Network.

The UK is a global leader in geographic address and street data. Local authorities and GeoPlace are critical to maintaining data quality and GeoPlace is central to the continued provision of a definitive high-quality source of UPRNs and USRNs. These unique identifiers automate data sharing - delivering better services and outcomes for businesses and citizens.

It is clear that organisations using the UPRN and USRN derive benefit - definitive street and address data should link every public or commercial system and service. Our vision is that no public-sector address appears without a UPRN and no street without a USRN.

GeoPlace is a public sector limited liability partnership between the Local Government Association and Ordnance Survey

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