Building public confidence in location data

The ABC of ethical use

Geospatial Commission

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Foreword by Commissioner Edwina Dunn OBE

Data driven technologies deliver benefits for individuals, organisations and the wider UK economy every single day. Location data is central to this revolution, changing the way that we order a taxi or shop for food and tackling the key national and global challenges of our time. Location data was core to managing the COVID-19 pandemic and is at the heart of combating climate change. Location data drives the innovation and scientific progress that will form the foundation of the way we live tomorrow – unlocking major efficiencies and economic benefits - provided we retain the public's trust in its use.

Our use of data driven technology is constantly evolving. The availability of data is expanding, and advanced tools such as artificial intelligence give us the means to analyse and process this data in new ways, making the impossible insights of yesterday, possible today. The government is committed to improving the use of data as a strategic national asset to drive economic growth and innovation across all sectors, as the UK's National Data Strategy sets out. Location data is a powerful resource in this capability and ambition.

Unlocking value: Location data underpins our modern digital society. It enables valuable personal benefits such as finding the fastest route; checking the weather; providing context to online search results; and tracking the path of flights, trains, cars and taxis.

It also enables public benefits. It improves public safety and health, for example directing emergency services and informing the UK's COVID-19 response, and it helps national and local governments identify where to target infrastructure investment, such as charge points to keep pace with the growing number of electric vehicles.

A pro-growth, trusted data regime: The trends in the use of location data are towards more sources for data collection, and faster, more automated data. This makes location data a powerful tool, but also underlines the importance of public confidence in how this data is used.

Users of location data must be transparent, and the benefits delivered must be clearly stated and adhered to. This will help government and industry to win the hearts and minds of those sharing their location data – building long term trust and support from the UK public.

We can build public trust and confidence by demonstrating commitment to shared values:

- **Accountability** - ensuring that location data is responsibly managed
- **Bias** - ensuring that potential biases in the use of location data are acknowledged
- **Clarity** - ensuring that information about the use and benefits of location data is set out clearly and understood by all.

All users of location data have a stake in building an ecosystem in which the public has confidence and trust. Doing so will allow us all to maximise the opportunity, to drive public benefit and to grow economic value.

Edwina Dunn **OBE**

Executive Summary

For the UK to capitalise on the economic, social and environmental benefits that location data can drive, it is vital that its use retains public trust and confidence.

Location technology underpins our modern digital society. It powers our everyday lives and drives innovation, from making and tracking deliveries to monitoring global deforestation. The ubiquity of location data gives it immense potential. It puts other data into context to provide new insights and will be a critical factor in realising government priorities, including Levelling Up[1], Net Zero[2], and Science and Technology[3].

This paper builds on existing data laws and ethical principles, as well as the Geospatial Commission's own research. Location data provides a useful window through which to consider data ethics. Its ubiquity makes it easier to ground a subject as complex as data ethics in tangible examples that support meaningful consultation. The Geospatial Commission has engaged widely, consulting: the public through our public dialogue and survey, practitioners and academia through our Oversight Group and Partner Bodies, and policymakers interested in data across UK government and the devolved administrations. Our aim is to support the national conversation of data ethics through a location data lens.

Many individuals recognise and support the use of location data to provide personal conveniences and wider societal benefits.

Members of the public share their location data with organisations every day in order to receive the personal services they value. However, data is rarely useful for just one purpose. Individuals often support their location data being made available for reuse when it leads to outcomes that serve a public benefit, such as improved public safety and health, better infrastructure and environmental benefits. The public supports these public benefits whether they are delivered by the public or the private sector.
For the UK to realise location data's potential, we must maximise public trust and confidence in this system of data use, sharing and reuse.

Support for location data use is conditional, but the Geospatial Commission's evidence shows we can improve public support by explaining the journey that location data takes, the public benefits it will support and the rights people have as data subjects throughout this journey.

Explaining this journey and, critically, the public benefit arising from it, can be a motivating factor for individuals to share their data initially and also to support its subsequent sharing and reuse. This enables people to move from feeling like 'data subjects' to 'data citizens'.

The ABC for the ethical use of location data outlines the building blocks for good governance to maximise public trust and confidence in this system of sharing and reuse of data.

Location data sits within a broad data landscape, which is governed by an existing framework of data laws. Good compliance with existing laws and principles is a base foundation for ethical use, but additional actions may be necessary to build public confidence and enable full value to be driven from the use of location data.

The Geospatial Commission proposes an ABC for the ethical use of location data:

Accountability Governing location data responsibly, with the appropriate oversight and security

Bias Considering and mitigating different types of bias, and highlighting the positive benefits of location data

Clarity Being clear about how location data will be used and the rights of individuals

Everyone working with location data (across all sectors of the UK economy and the public sector) share responsibility for the public's trust in the location data ecosystem. The Geospatial Commission's findings suggest that by following these building blocks we all stand to benefit from an ecosystem in which location data can be used, shared and reused with confidence and public support. This will give the UK the foundation to innovate, drive increased public benefit, and fully exploit our strengths in science and technology.

What is this document?

Retaining and building public confidence in location data is vital to realise the opportunities of its use. This document outlines the current geospatial ethics landscape and three building blocks for ethical use. It seeks to build greater public confidence in location data use. It will contribute to Pillar 4 of the National Data Strategy, helping ensure that data is used responsibly and Mission 2 of the National Data Strategy, securing a pro-growth and trusted data regime in the UK.

Who is it for?

Any organisation in the UK working with or promoting the use of location data. The three building blocks for ethical use will inspire organisations to use location data in a way that builds greater public confidence in location data. This will likely also be of interest for organisations considering data ethics more generally.

Why now?

The widespread use of new technologies means that data about our lives, including location data, is available in increasing frequency, detail and accuracy. This necessary evolution of our geospatial ecosystem raises new and significant ethical considerations. The UK must meet and answer these considerations to build public

The ABC of ethical use of location data

Currently many people recognise and support the system of use, sharing and reuse of location data to provide personal and public benefits,but this support is conditional on trust and confidence.

ABC proposes three shared values to safeguard and build the public's trust and confidence in the use, sharing and reuse of location data, creating a system in which we all stand to benefit.

Accountability Governing location data responsibly, with the appropriate oversight and security

Bias Considering and mitigating different types of bias, and highlighting the positive benefits of

Clarity Being clear about how location data will be used and the rights of individuals

01 Introduction

Introduction

Location technology underpins our modern digital society. It powers our everyday lives and drives innovation, from making and tracking deliveries to monitoring global deforestation. The ubiquity of location data gives it immense potential. It can put other data into context to provide new insights and will be a critical factor in realising government priorities, including Levelling Up[4], Net Zero[5], and Science and Technology[6]. **For the UK to capitalise on the economic, social and environmental benefits that location data can enable, it is vital that its use retains public trust and confidence.**

To build and maintain the public's confidence, organisations that use and share location data need to incorporate ethical considerations into their ways of working. Ethical considerations are complex as they shift with societal changes. Data ethics complexity is compounded by the rapid changes in technology, making the impossible insights of yesterday, possible today. Many of the ethical considerations relevant to data more generally are also applicable to location data.

However, unlike many other types of data, such as health or financial data, location data is ubiquitous. This ubiquity of human mobility data, plus its high level of detail and the inferences it offers, raises unique ethical considerations. This includes instances where data can be linked to an individual, but also where data can be linked to groups and communities with shared characteristics. Furthermore, location data can evoke a feeling of vulnerability because of the implications for personal safety that arise from information about where people are, or where they have been or are going and with whom. This feeling of vulnerability is not unique to location data, but location data's ubiquity means it may be felt more often and acutely.

Location data's ubiquity also makes it easier to ground a subject as complex as data ethics in tangible examples that support meaningful consultation. People instinctively understand the concerns around a mobile app that tracks someone's location, but it is also clear why location is crucial for ordering a taxi, to have a parcel delivered, or to understand where COVID-19 infections are higher or lower.

What is location data?

The term 'location data', also known as geospatial data, is any data that has a geographic element. It tells us where people and objects are in relation to a particular geographic location. Whether in the air, on the ground, at sea or under our feet. These data can relate to events, objects or people and can be static (such as a person's address or the location of a school) or dynamic (such as a bus travelling along its route).

Is location data personal data?

Location data is personal data when it relates to an individual who can be identified, either directly or indirectly7. However, location data is often not personal data, such as aggregated population data or when describing the location of features that are not linked to an individual.

The principles in this paper can be applied to both personal and non-personal data; maximising public confidence depends on clear communication of how location data is used and its benefits. However, issues around trust will be particularly relevant where the location data being used is personal data.

The Current Landscape

This document takes as a foundational basis existing legislation relating to data use and it is informed by a wealth of expertise, reports and principles relating to data ethics. For example:

Data laws, and guidance on these laws published by the Information Commissioner's Office (ICO), including:

- The UK General Data Protection Regulation (GDPR)[8] and the Data Protection Act 2018 (DPA)[9].
- The Privacy and Electronic Communications Regulations (PECR)[10].

Ethical principles for data and artificial intelligence (AI), developed by government and public sector bodies[11], such as:

- The government's National Data Strategy, which recognises the importance of using data responsibly to support innovation and research[12].
- The Data Ethics Framework, published by the Central Digital and Data Office (CDDO), guiding appropriate and responsible data use in government and the wider public sector[13].
- A guide to using AI in the public sector, created by the Office for AI, Government Digital Service and the Alan Turing Institute[14].
- Targeted guidance for researchers and statisticians using geospatial data, published by the UK Statistics Authority (UKSA)[15]. The UKSA has published ethical principles for all data use and created a self-assessment tool to enable researchers to review the ethics of their projects throughout the research cycle[1617].
- The 'Five Safes' model, created by the Office for National Statistics (ONS), to ensure safe people, safe projects, safe settings, safe outputs and safe data.[18]

Principles developed by the private sector and civil society, who are playing a vital role in the development of data ethics. These include:

- The Data Ethics Canvas, created by the Open Data Institute (ODI), to guide anyone who collects, shares or uses data to identify and manage ethical issues[19].
- The Locus Charter Principles published by EthicalGeo[20].
- The Gemini Principles, used to guide the development of the UK's national digital twin[21].
- The Alan Turing Institute's guide for the responsible use of AI systems[22]. Internationally, the Organisation for Economic Co-operation and Development (OECD) has created a dedicated workstream for geospatial ethics[23].

Many of the ethical considerations for location data will be the same as for other types of data and technology, and good compliance with existing laws and principles can be seen as a base foundation for ethical use. But additional actions may be necessary to build public confidence and enable full value to be driven from the use of location data.

Standing on the shoulders of giants

The field of data ethics is broad, stretching across different types of data and ever-emerging technologies. Ethical considerations continue to evolve alongside the evolution in the increasing use and importance of data.

This paper is intended to contribute to the growing body of data ethics literature. The Geospatial Commission has worked closely with a wide range of stakeholders, including the Centre for Data Ethics and Innovation (CDEI) and the Central Digital and Data Office (CDDO), to understand public attitudes towards location data use in the UK and how ethical use can maximise public confidence.

The ABC for location data ethics in this document uses the evidence the Geospatial Commission has gathered to build on the three principles for public sector data use outlined in the UK government's Data Ethics Framework: Transparency, Accountability and Fairness[24-].

The Geospatial Commission's approach

In 2020, the Geospatial Commission published the UK's Geospatial Strategy, with an ambitious vision to unlock the power of location data[25]. The Strategy outlines four missions to tackle challenges in the geospatial policy landscape and maximise location data's opportunities.

Mission 1, to promote and safeguard the use of location data, recognises that society can only continue to benefit from the widespread use of location data and its future opportunities if location data is used in a way that retains public confidence. The Geospatial Commission therefore committed to publish a paper about how to unlock location data's immense value, while mitigating ethical and privacy concerns.

To inform this work, the Geospatial Commission embarked on a programme of engagement, starting with an independent public dialogue, which is the UK's first deliberative consultation on location data ethics. The dialogue, launched in March 2021, engaged 85 members of the UK public in a series of online workshops and activities, supported by expert practitioners and academics. The report, published in December, provided evidence on public perceptions about location data use, offering valuable insights into what the public believe are the key benefits and today's concerns[26].

In late 2021 the Geospatial Commission commissioned YouGov Plc. to conduct a quantitative survey on location data ethics. The survey, representative of all UK adults, sought to build on the findings of the independent public dialogue and establish a baseline of trends in how the public perceive location data. The findings, published in February 2022, were similar to those made by the public dialogue and align with recent research on data ethics conducted in the public sector[27].

The Geospatial Commission has engaged with practitioners from the outset. In 2020, we undertook a market study of the geospatial ecosystem which provided important findings around public trust and location data[28]. The public dialogue was supported by an independent Oversight Group that was formed to guide the process. It comprised public, private sector and civil society organisations.

Geospatial Data Market

In November 2020, the Geospatial Commission published an independent report setting out the first comprehensive assessment of the current and potential future value of the UK's geospatial economy. The report concluded that geospatial is an enabler of activity across the economy and is best described as an 'ecosystem'[29].

Since geospatial cuts across different sectors, its value is difficult to measure. The Geospatial Commission plans to publish guidance in 2022 which will provide direction on how public sector organisations can make a case for investment in location data by providing a framework for measuring the economic, social and environmental value of location data. We expect these principles will also be relevant to the private sector.

The Geospatial Commission's public engagement found that the public recognise the value of outcomes with a public benefit and they support the use of location data to this end. Our expectation is that this paper will help build public confidence in the use of location data and technology, enabling further uses of this data and more value to be realised.

Geospatial Commission's engagement in numbers

1,757

MEMBERS

of the public surveyed their views on ethical location data use

20

EXPERTS

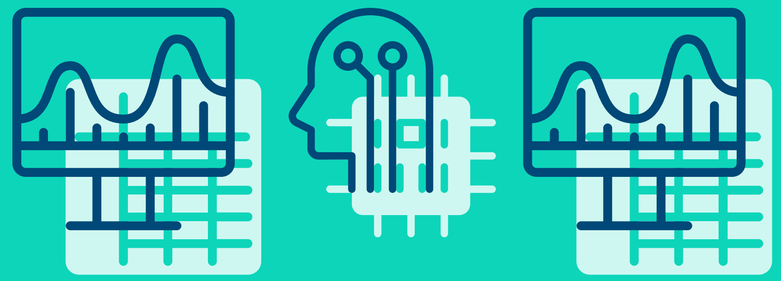
from the public, private and third sectors comprised the Oversight Group who supported our work

85

PARTICIPANTS

from across the UK involved in four online workshops as part of the public dialogue on location data ethics

42



ORGANISATIONS

in our Geospatial Data Market Study who were consulted on location data ethics

How ethical considerations apply to three location data trends

Real-time location data is increasingly available thanks to high levels of connectivity as well as the ability to store data in the cloud and access it through edge-computing.

Examples

- Travel: Instant re-routing in case of a delay, mapping of live traffic levels, support for autonomous vehicles.
- AI decision-making and automation: Smart home systems where our smartphones can 'talk' via wifi to our lights and

The proliferation of sensors matching the proliferation of devices that can house these sensors, and decreases in the cost and size of geospatial technology.

Examples

- Providing location data about us: Smartphones and wearable technology can collect data about our location at all times, modern cars increasingly feature high-resolution object-scanning technology.
- Mapping our environment: Sensors in our environment can measure footfall and pollution and create real-time 3D imaging such as digital twins; this enables earth-

Artificial intelligence (AI) and machine learning (ML) is increasingly being used in the geospatial sector to support the processing of vast amounts of data.

Examples

- Extracting information: Analysing imagery of streets to find and map potholes, measuring the oil storage volume in ports from satellite imagery.
- Supporting decisions: Identify suitable locations for

Potential ethical considerations

These trends in the use of location data, towards faster, more prolific, and more automated collection and analysis impact the ethical considerations, such as:

- the impact of poor data management or bias may be magnified because of the speed and automation of decision-making
- increased automation may mean poor data management and that bias is harder to spot
- faster, more prolific, and more automated use of data means there is more data use to explain, and the use is more complicated, so clarity for data subjects is harder to realise without conscious effort

02

Location Data for the public benefit

Public benefit outcomes build confidence in the use of location data

The public's trust and confidence in the system of location data use, sharing and reuse appears to grow as their understanding of how and why it is used grows, and they believe the burden of driving this awareness is on organisations, not individuals[30].

The ethical use of location data is vital to retain existing public trust and it can also be an indispensable tool to build confidence to maximise use, sharing and reuse of the data. Ensuring that the right policies, guidance and information is available and utilised to create a system of trust will enable a greater understanding, awareness and acceptance of location data use, including location data relating to individuals movements. Increased data sharing and innovation is in the UK's interest, supporting organisations to provide the public services and individual conveniences we all depend on.

Many people support the use of data when this is for the public benefit[31][32][33]. The Geospatial Commission's research has found that this support applies to location data specifically[34]. We found that people were more likely to support the use of location data where this has a public benefit, including to improve personal and public safety, plan and improve infrastructure, provide public health benefits and support improved environmental outcomes.

We also found that people were much more likely to understand public benefits when these were explained to them. Before the first of four public dialogue workshops, most participants felt they knew nothing or 'just a little' about location data, and just over half felt that the use of location data was positive for society. Following the third workshop, most participants felt they knew a 'fair amount' to a 'great deal' about location data, and three quarters felt the use of location data was positive for society.[35]

This demonstrates that public benefit outcomes arising from the use of location data can be a motivating factor for acceptance of location data use arising from individuals, but clear explanation of the public benefit arising is required.

The Geospatial Commission is interested in exploring how organisations, regulators and policymakers can support the increased acceptance for location data to be used, shared and reused across the geospatial ecosystem to drive public benefits.

The Geospatial Commission's finding that public confidence is increased when location data is used to support public benefits suggests that we should encourage increased use, sharing and reuse for these purposes. For example:

- **Organisations** could consider how they support the public benefit through appropriate sharing of and/or access to the location data they collect[36]. In our public dialogue, participants expressed concern about the amount of profit a company may generate from using location data being disproportionate to the 'amount' of good or benefit to society from that use[37]. By considering the public benefit, organisations could build the public's confidence in the system of location data use, sharing and reuse.

- **Regulators** could consider the use of location data for the public benefit in the regulation of markets. While it is clear that location data can and does enable delivery of important services that benefit the public and wider society, much data remains siloed within organisations potentially giving rise to competition concerns.

- **Policymakers** could continue to work with organisations to understand and mitigate any current barriers to effective data access, including legislative barriers, and find mechanisms to encourage the use of location data to support public benefits, which in turn should drive more data sharing and use across the UK. Policymakers will also have a crucial role in defining 'public benefit' in practice which is not an easy task and will require ongoing reflection.

What is the public benefit?

By ‘public benefit’ this paper refers to the general benefit or wellbeing of the public. This reflects the use of the term in the Geospatial Commission’s public dialogue, where participants typically used it to convey things that benefit society and communities.

These services of public benefit may be provided by the public, private or third sectors. Location data used within public services such as policing, health and care services, and public infrastructure (such as the design of roads and public transport services), were all seen as being for the public benefit.[38]

03

The ABC of ethical use

Public benefit as necessary but not sufficient

Public benefit outcomes can be a necessary motivator for individuals to support the use of location data relating to their movements, but alone they are not sufficient.

The Geospatial Commission's research has identified a sense of 'digital resignation'[39] towards the use and sharing of location data arising from a lack of trust in how data is governed[40][41]. Many people reluctantly accept and use digital technologies, including location technologies, despite having reservations about data use or sharing. The UK public generally wants this digital resignation to cease and to move from feeling like 'data subjects' to becoming 'data citizens'. They want to be part of a location data ecosystem in which they are shown how services work, and are given more informed, meaningful choices.

Creating an ecosystem of trust around location data use depends on robust, responsible organisational practices that are clearly communicated. The Geospatial Commission recognises that adequately balancing these responsibilities is challenging but believes it is possible to create a system in which the use and governance of location data is clear and understandable, without putting undue burden on either the organisation or the individual.

A useful analogy is food packaging. Organisations are required to undertake an assessment of the nutritional qualities of food products, and then to provide clear and accessible information about this on their food packaging. This offers consumers an opportunity to be aware, feel in control and make decisions about what they eat - building confidence in the system as a result. Consumers need not be dietary experts or food safety specialists to understand and make sensible decisions about their diets.

In the same way, users of location data can ensure they have good governance in their use of location data, and can explain this clearly to the public. The Geospatial Commission has set this out in ABC building blocks of the ethical use of location data:

1 **Accountability -** Governing location data responsibly, with the appropriate oversight and security

2 **Bias -** Considering and mitigating different types of bias, and highlighting the positive benefits of location data

3 **Clarity -** Being clear about how location data will be used and the rights of individuals

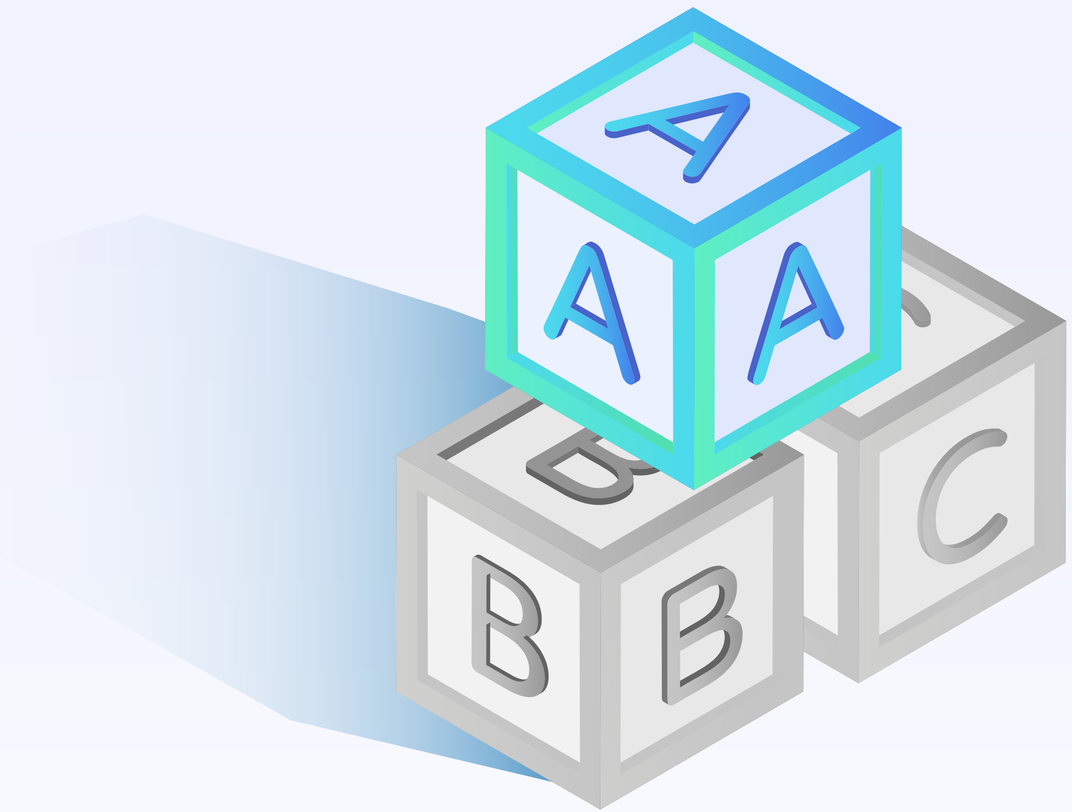
These building blocks are interdependent. Growing the public's clarity around location data is paramount to building public confidence. However, this clarity is redundant if organisations do not first build robust practices that ensure accountability and consider bias. Conversely, they cannot maximise public confidence with appropriate governance if they do not then seek to build greater clarity.

By prioritising and meaningfully implementing each building block, organisations can build confidence, and thereby enable greater public trust in the system of location data use, sharing and reuse, and the realisation of the immense opportunities location data offers.

Q-FAIR

The accessibility of location data is linked to the Geospatial Commission's Q-FAIR approach. This underlines that to maximise value, location data must be of appropriate Quality, as well as Findable, Accessible, Interoperable and Reusable.[42]

Accountability



What is it?

The accountability principle[43] requires organisations to take responsibility for their use of location data and build 'effective governance and oversight mechanisms' to be able to demonstrate compliance[44]. Responsible use requires data controllers to process personal data securely by means of 'appropriate technical and organisational measures'[45].

How is it currently perceived?

Our public engagement has found that accountability is a key factor in deciding whether a data subject supports the use of location data relating to their movements but, currently, the public feel unable to hold data controllers to account. Information about the governance of location data and the oversight mechanisms in place to protect it are often inaccessible. This means many individuals feel disempowered, less secure and unable to have sufficient control over their location data, which in turn makes them feel less safe and more distrustful of its use.[4647]

What does meaningful change look like?

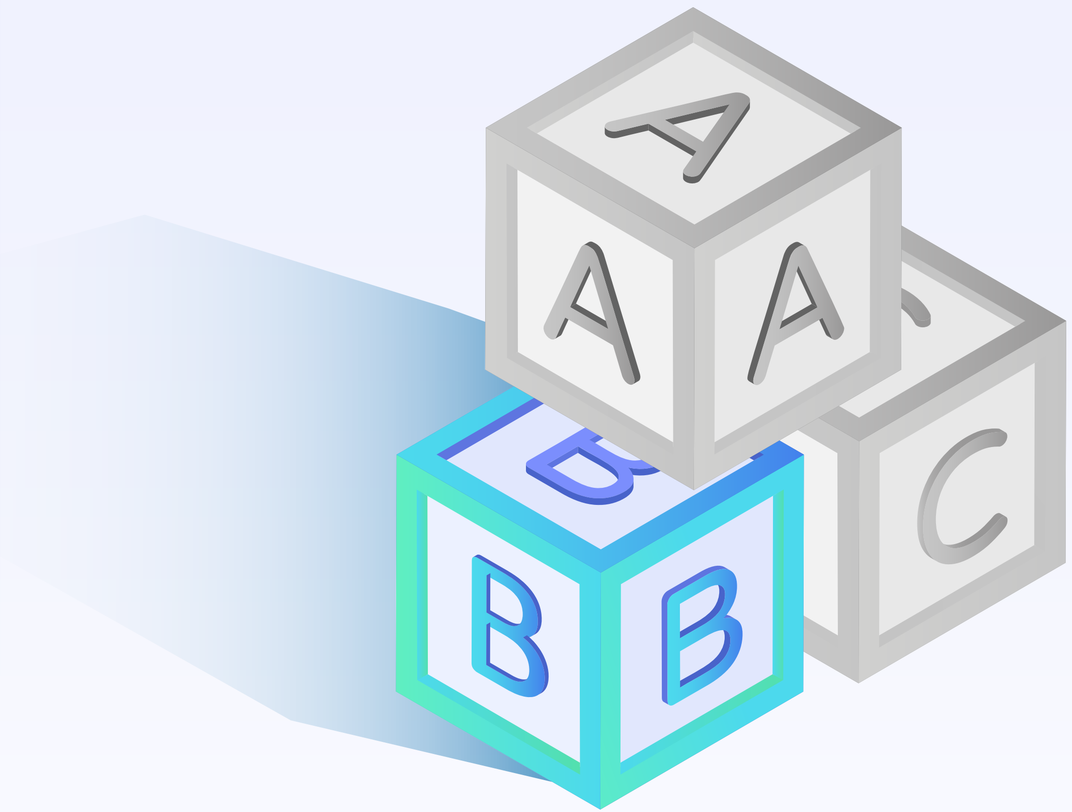
Effective governance and oversight mechanisms for any location data project, as well as the clear communication of them, is essential to ensure best practice, securely held data and to maximise public confidence. This could include providing clarity around the journey that an individual's location data will take and the points at which data subjects are consulted. Organisations could consider the avenues data subjects have to interrogate how their location data is controlled and the best ways to respond to questions and concerns that data subjects have[48].

Organisations could go one step further to build meaningful accountability by providing individuals with ways to communicate not just how they want their data collected, but what specific data they are happy to provide. This supports the principles of data protection by design and default[49]. Individuals could be given a platform to review the location data gathered over a period of time to enable them to consent to whether all of their data or just some is, for example, used or restricted, anonymised or deleted.

How can it maximise confidence?

Current accountability processes may be insufficient to maximise individuals' confidence that their location data is used responsibly and held securely. Direct lines of accountability between the data subject and the data controller can build confidence in an organisations' internal governance and oversight mechanisms. Clearly communicating these governance mechanisms, and the avenues for subjects to interrogate how their location data is used, can foster a sense of trust and inclusion between user and subject. Greater trust from the public in the validity of the governance mechanisms will in turn empower organisations to use and innovate with location data more confidently.

Bias



What is it?

Organisations should be mindful of the different types of bias that can result from the use of location data, including: the replication or exacerbation of existing biases, the transfer of biases from elsewhere, and the masking of bias or compromise of oversight processes due to a perception that the use of data makes technology inherently unbiased[50]. It is crucial that data controllers consider bias within their projects.

How is it currently perceived?

Research into public attitudes towards data generally shows that only 19% of people believe that tech companies are designing their products and services with the public's best interests in mind[51]. There is an acknowledgement that the use of location data, as with other types of data, has the potential to affirm existing biases or disadvantage certain groups[52]. The Geospatial Commission's public dialogue found that, overall, most participants felt that the use of location data could contribute to unfair treatment of individuals or different societal groups[53].

What does meaningful change look like?

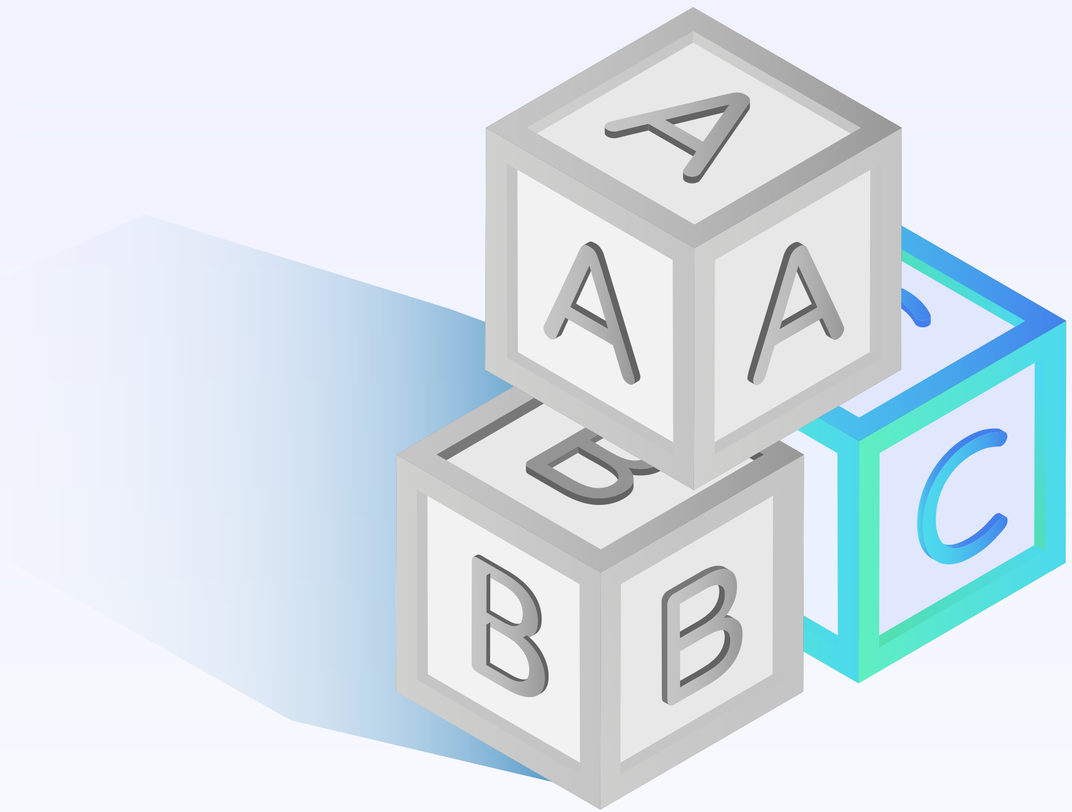
Data ethics guidance such as the government's Data Ethics Framework provides specific actions to ensure that projects remove any potential to have 'unintended discriminatory effects on individuals and social groups' and are consistent with the public interest[54]. Bias could also be specifically addressed, for example, by ensuring that as new technology is implemented, impact assessments evaluate whether different types of bias are likely to be present.

In our public dialogue, participants linked concerns around bias with potential positive benefits for some groups. They did not feel that location data needs to benefit everyone equally, rather that there should be a conscious consideration of possible bias, and communication of those who do benefit. For example, lighting our streets at night is considered a public benefit, but this may have a particularly beneficial impact for women as noted as part of the government's Safer Streets programme last year[55].

How can it maximise confidence?

Removing bias and considering who benefits is key to unlocking the power of location data in a way that considers the public benefit. Considering potential bias and discrimination in the use of all data is fundamental, but organisations can also consider how location data projects can be harnessed to create public benefit outcomes. Clearly communicating these outcomes, the beneficiaries and what is being asked of the data subject, can lead to the greater sharing of location data.

Clarity



What is it?

Building clarity around location data is an opportunity for organisations to clarify the role a data subject's location data plays in providing the public services and personal conveniences individuals value. Clarity is achieved through transparent practices, which mean that 'actions, processes and data are made open to inspection by publishing information about the project in a complete, open, understandable, easily-accessible, and free format'[56].

How is it currently perceived?

Organisations tend to provide transparency by using one-size-fits-all terms and conditions and privacy notices. Providing full information using these notices must continue, but for some they create greater opacity, rather than clarity and accessibility[57].

Research has shown that there is a growing 'environment of tenuous trust' around data sharing in the UK, 'in which data may be shared for valuable purposes but the manner in which this is communicated to the public is primarily to limit a potential negative reaction, rather than active positive engagement'[58]. Most participants in the Geospatial Commission's public dialogue on location data ethics initially said that they knew only a little or nothing at all about location data, and many were surprised about how much location data they might be sharing[59]. In our quantitative survey, 81% had limited knowledge, while 14% had not heard of location data[60].

The Geospatial Commission acknowledges that there is also scope to improve the understanding and awareness of location data's potential and potential for misuse, amongst the organisations who use it. We may consider this in the future.

What does meaningful change look like?

Meaningful transparency means improved access for the data subject, which depends on organisations explaining and engaging with the public[61]. The ambition is not to communicate everything but to communicate the right things. For example, the public desire clearer, more accessible communications to make more informed decisions about their location data. They want simpler, more granular and less intrusive or complex ways to understand and consent to, or have control over, how their location data is collected and used. They believe the burden of achieving this awareness is on the organisation, not the individual. Organisations could go one step further and take a more active and creative approach to informing the public about how their location data is collected, stored and used and, vitally, what the benefits are for them.

How can it maximise confidence?

The Geospatial Commission's evidence has shown that when the public have a greater understanding and awareness of location data they have more trust and confidence in its use. The UK public generally has a low understanding of what location data is and how

organisations collect, store and use it[62]. This means that the benefits the public are accruing from the use of their location data can also be unclear or altogether unknown. This suggests that the current way of doing transparency is not sufficient to build public confidence. To build public confidence in location data use, organisations could provide meaningful transparency through careful engagement with those whose location data they are using.

Clarity in focus

Opening the 'black box' of location data use can build public confidence in it. The public dialogue worked with specialists to build participants' understanding of what location data is, how it is used, and the public services and individual conveniences it already underpins. Before the first of four workshops, most felt they knew nothing or 'just a little' about location data and just over half felt that the use of location data was positive for society. Following the third workshop, most participants felt they knew a 'fair amount' to a 'great deal' about location data and three quarters felt the use of location data was positive for society. A third of respondents felt the use of location data was positive for them personally before the first workshop, which grew to over half after the third workshop.

Many people perceive sharing their data as a transactional act and weigh the potential costs and benefits. Whether a transaction is considered acceptable can depend on who benefits and how or what is being asked of the data subject. For example, the Geospatial Commission's public engagement has found that people generally feel more comfortable when location data is not linked with data about individuals, or when it is aggregated and anonymous[63]. Our quantitative survey found that 14% of respondents thought it was acceptable to collect location data that identifies them but this rose significantly to 56% when the data is de-identified[64]. Effective anonymisation is possible[65] and organisations could consider the role that privacy enhancing technologies (PETs) can play in building this[66]. In 2021, the Information Commissioner's Office (ICO) launched a consultation on its updated draft

End notes

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