Geospatial Commission: Call For Evidence Response Questionnaire

Please submit your completed questionnaire to:

geospatialcommission@cabinetoffice.gov.uk.

Clearly title your email *'Call for evidence response'*.

About you and your organisation

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Please select which of the following best describes you as a respondent:

Respondent	**Please mark with a X**
Academic	
Business representative / trade body	**x**
Central government	
Charity or social enterprise	
Individual	
Legal representative	
Local government	
Large business (over 250 staff)	
Medium business (50 to 250)	
Small business (10 to 49)	
Micro business (up to 9)	
Other - please state	

Call for evidence - three key themes

We have identified three high-level themes that could help our approach to setting a strategy which are as follows:

1. **Supporting innovation in the geospatial sector**, exploring how to secure cutting edge skills, the right access to data, and opportunities from emerging technologies for the geospatial sector itself
2. **Enhancing the UK's geospatial assets,** looking at how best to align interests, avoid duplication, and instill best practice across the whole public sector
3. **Driving investment and productivity in geospatial applications**, asking in which wider sectors the most value lies from better exploitation and use of geospatial data, in the UK and internationally

Our questions

Q1. Is our view of the geospatial data types accurate? If not, what should be included or excluded from this?

Yes, we agree with the accuracy of the geospatial data types provided.

Q2. In addition to current government policy, what are the areas of geospatial skills where the commission could best focus, to help ensure the necessary capability within the UK for the future?

We are not aware of any further areas of geospatial skills in which the commission could best focus.

Q3. What are the geospatial skills needs and gaps in your organisations, how can these be most effectively addressed, and how can careers in the sector be best promoted?

It would be valuable for estate agents to be trained in the use of Geographic Information System (GIS) mapping software, particularly for its use throughout the process of a sale and for marketing. GIS is a framework for gathering, managing and analysing geographical data, it can also be used to visualise the data – for instance, on an interactive map. Considering this, many estate agents will require training to understand geospatial procedures, workflows and software and how best to encompass this technology into their businesses. Online courses and webinars are ideally suited to teach geospatial skills as they are both accessible and informative. The commission should consider hosting webinars for the various sectors included in this call for evidence. HM Land Registry

provides webinars to understand the conveyancing process[1], which have been made freely accessible for the public on various devices. We believe the Geospatial Commission could replicate this service.

A bespoke geospatial skill course specifically for estate agents could be made available at varying levels of learning depending on demand. NAEA Propertymark offers courses for estate agents, some are online specific, and others can be location based or in-house. These are made available to both members and non-members. This course would then be advertised through our various communications such as mailers, articles, our magazine Property Professional and at events throughout the year.

The commission should consider working alongside private sector geospatial companies in offering training for businesses in geospatial skills. For example, Cadcorp[2] provides clients with the option of either a standard or bespoke training course – which can be provided on or off site. Cadcorp is used specifically in land and property for GIS land management, and has use for estate agents, property developers (such as McCarthy & Stone[3]), housing associations and lettings. Esri UK & Ireland[4] provides a 'Request a Demo' service, where those enquiring can select a date and time and make requests to tailor the demo to their needs. Esri works with both private and public sector clients such as: Knight Frank and the Greater London Authority. Bespoke training provided by private companies work well for all parties involved, encouraging relationships between the commission and the private sector and offering more choice for those who require training.

GIS maps can provide visually appealing and highly interactive marketing materials for estate agents, an example of this being OS Open Zoomstack[5]. OS Open Zoomstack is a comprehensive vector base map that shows detail of Great Britain's mapping down to street level. This technology could be utilised in virtual tour videos of properties online. It has a 'Fly to' feature that allows users to zoom in on a specified location through animation and has differing maps for day and night. An example of this could be using the night map to highlight local nightlife for those looking to buy in a quieter neighbourhood. If Zoomstack progresses beyond trial stage, estate agents would benefit from accessing the technology through a licence. Ordnance Survey should consider marketing this to the property sector by providing online demonstration and user guides.

Encouraging further knowledge of geospatial procedures, there is added benefit for NAEA Propertymark members as any courses or webinars taken part in could be logged as Continuing Professional Development (CPD), which they must participate in at least 12 hours of per year with a minimum of four hours obtained through educational events as requirement of membership[6]. NAEA Propertymark members already go above and beyond the legal requirements for estate agents[7],

[1] https://www.gov.uk/guidance/hm-land-registry-requisitions#webinars
[2] https://www.cadcorp.com/market-sectors/land-property/
[3] https://www.cadcorp.com/files/uploads/resource-files/McCarthy-Stone-casestudy.pdf
[4] https://www.esriuk.com/en-gb/home
[5] https://www.ordnancesurvey.co.uk/business-and-government/products/os-open-zoomstack.html
[6] http://www.naea.co.uk/join/continuing-professional-development-cpd.aspx
[7] http://www.naea.co.uk/join.aspx

and we pride ourselves in being industry leaders, having geospatial skills will further the professionalism of our membership.

Finally, following the Government's announcement to regulate property agents[8], a geospatial skillset could be a requirement of being a regulated estate agent. We have long lobbied for the regulation of estate agents. Should regulation be introduced, to promote geospatial skills in estate agency - there should be an additional requirement in qualification, or at least the ability for legislation to be amended to add this requirement in the future to coincide with technological advances. This could include a basic working knowledge of using geospatial data or GIS in the sale of property and demonstrating a working knowledge of the software. This would ensure all qualified estate agents have a geospatial data skillset, thus futureproofing the sector for emerging technology.

Q4. Are there any publicly or privately-held geospatial datasets that are currently challenging to access or use or of insufficient quality, but which you or your organisation would find valuable if these issues could be resolved? Please explain why this would be of value, and how access/quality could be improved?

The digitisation process of Local Land Charges must consider technological advances as most Local Authorities are not yet incorporated. Digitised Local Land Charges at the time of writing are limited to Warwick District Council, Liverpool City Council and the City of London Corporation, with only 26 local authorities' local land charges expected to be transferred by March 2019. Thus, the digitising process is still in its infancy and data migration is projected to take up to seven years[9]. Seven years is a particularly long time in terms of both governance and technology, and the commission should consider how this data migration will work alongside any advances in technology.

Making Local Land Charges digitally accessible is valuable to estate agents and their clients as it takes away some of the need for a solicitor or licensed conveyancer carrying out the search manually. Thus, this speeds up the process as the information can be obtained much quicker digitally than when requested manually by a legal professional to the Local Authority.

Ordnance Survey should begin integrating further details already publicly available into OS Master Map to further benefit user operability. OS Master Map Topography Layer provides registered land boundaries but does not then hold layer data sets for 'Price Paid Data', which is freely available through HM Land Registry and the Open Government Licence (OGL). Considering that OS and HM Land Registry are partner bodies with the commission, we believe this collaboration would not face any challenges in a roll-out.

Collating this data in one source is beneficial for estate agents as it can be used for

[8] https://www.gov.uk/government/news/government-to-professionalise-the-estate-agent-market
[9] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/700335/Local_Land_Charges_Impact_Assessment_BIS_LR003_HMLR.pdf

marketing and advertising purposes and allows for a simpler valuation process when vendors wish to sell. It would also be beneficial for consumers, as they would be able to access housing market trends when considering whether to make an investment in a certain area.

Q5: Do you anticipate that any changes will be needed to the both address data and the wider address ecosystem, to support emerging technologies? Please provide evidence of value to support any proposed changes.

There should be a standardisation of address data across the entirety of the UK. If this is not possible, the commission should consider creating an authority or standard that can combine devolved authorities address data. It is equally important that address data is verified to ensure accuracy.

The National Address Gazetteer should be fully utilised to support emerging technologies. It is managed by Geoplace which is owned by Ordnance Survey and the Local Government Association. This combines existing Local Authority data with further data from Ordnance Survey, Valuation Office Agency and Royal Mail Postcode Address File (PAF). This also includes Scottish data through a partnership with Ordnance Survey and Scotland's Improvement Service. It uses Ordnance Survey's AddressBase technology to match the PAF with the Unique Property Reference Number (UPRN). Almost 400 checks are ran on each record before Geoplace accepts it onto the database, meaning that each record is of high accuracy.

The commission will have to consider how to involve Northern Ireland authorities and the corresponding data to ensure a single UK standard, as Northern Ireland address data is not covered by the National Address Gazetteer. By ensuring a standardisation of address data, wider users of geospatial data in the public and private sector will be able to match up and complement existing data with clarity.

Q6: How should the commission be looking to develop the UK's capability in Earth observation data, both technologically and to support an effective market?

It is not applicable for us to respond to this question.

Q7. Which new technologies should the commission focus on to provide new opportunities to process and exploit geospatial data for economic growth?

The commission should focus on creating a Digital Log Book for each property that is bought and sold to speed up the buying and selling process and provide transparency and comprehensive information for all parties involved. This Log Book would be underpinned through geospatial data and information held by Land Registry (or the corresponding form of land registration outside of England and Wales).

Using geospatial data as a base this technology could go further. The Log Book should have sections for the different stages of the transaction, allowing for documentation to be uploaded from the various parties with dates for deadlines and timescales. This would be a hub for property information such as: boundary lines, flood and mining zones, historical ownership data and digital copies of home related administration such as the Energy Performance Certificate. This would allow for all parties involved to log-in and find out relevant information and ensure that they are more engaged and better informed.

Property chains can become long and complicated, and a problem at any point, such as simple as missing piece of paperwork can cause delays for all involved. An online filing system specific to each property sold would speed up the process and allow for documents to be loaded onto a central point and importantly be downloaded quickly and easily to produce documents on request. Furthermore, the conveyancing process requires information from various third parties before contracts can be exchanged. The Log Book would help to avoid delays and allow regular contact with the agent and buyer to help deal with any issues that arise.

By simplifying the home buying and selling process, a Digital Log Book would contribute to an increase in property sales, and consequently revenue obtained through churn and taxes associated in the purchase of property. To this end, less time, resources and energy from all involved parties will be put into long or failed transactions and more revenue will be generated for spending on local goods and services.

Q8. How can geospatial data and applications be used to support enhanced roll-out of future technologies?

Through the creation of a commission approved geospatial standard and corresponding applications, it will provide a firm foundation to support enhanced roll-out of future technologies.

Q9: What are the options for how public sector organisations could continue to invest in maintaining and enhancing our geospatial data assets?

It is not applicable for us to respond to this question.

Q10: What areas of the underpinning geospatial infrastructure such as positioning technologies, including GPS and indoor positioning systems, and geodetic networks and frameworks to support them, should we be prioritising the development of, in order to support the emerging requirements for geospatial data?

The commission should prioritise the development of Global Positioning System (GPS) in land planning and development to efficiently source suitable locations. GIS complements GPS, combining the systems allows planners and developers to pinpoint the best location for a particular structure. For example, planning a new block of flats close to desirable amenities, or placing a commercial building in an area lacking in much needed amenities.

GIS and GPS software can forecast future needs, making it imperative that planners consider housing for the increasing elderly population. In our Housing 2025[10] report, we discovered that whilst 1.1 million households in England and Wales are overcrowded (4.5% of total households), but 16.1 million households are under occupied (making up 69% of total households). Despite a projected 48,000 additional private retirement homes by 2022[11], there will still be a significant shortfall of property for those at retirement age as the Government continue to prioritise building family homes. It is for these reasons that planners should now prioritise homes for downsizers.

Currently, there is a lack of suitable choices for 'last-time buyers'. In 2015, Legal & General commissioned a report which found that when last time buyers are looking for a new home, the most common preferences are being close to family and friends (32%), being near their current neighbourhood (18%), having easy access to healthcare (16%) and being located near shops (10%)[12].The same report highlighted the worth of this market at £820 billion.

Through prioritising GPS in planning of retirement properties, downsizers will be provided with more choice of suitable properties. Planners will be able to consider existing amenities and transport networks, whilst considering issues such as proximity to neighbourhoods and hospitals. They will also be able to make use of the software in planning new amenities to complement new housing developments for downsizers.

This not only benefits planners by making land sourcing simpler and better targeted, but also downsizers and the wider housing market. By encouraging 'last-time buyers' to downsize, existing larger properties will become available on the market, increasing churn through property sales and taking away some of the pressure for government built affordable housing. Through prioritising the use of GPS in development, the commission are futureproofing the planning and design of

[10] http://www.naea.co.uk/media/1043988/housing-2025.pdf
[11] http://www.naea.co.uk/media/1047383/autumn-budget-2018-representation-to-hm-treasury-from-naea-propertymark.pdf
[12] https://cebr.com/reports/uk-last-time-buyer-market-worth-820-billion/

property and community infrastructure.

Q11: What role should the private sector have in both the development and maintenance of the underpinning infrastructure and enhancing the UK's geospatial data assets?

The role of the private sector will be crucial in opening up its own geospatial assets and data by working collaboratively with the public sector. The commission should consider working with privately held geospatial applications to encourage innovative ideas from the private sector.

Knight Frank, an NAEA Propertymark regulated company, has an entire team dedicated to geospatial data analysis in its research body. In response to the government's 2017 Housing White Paper in which the upward extension of buildings was discussed, Knight Frank utilised geospatial data to create 'SKYWARD'[13].

The creation of SKYWARD highlights that geospatial innovation from the private sector can also be exploited by the public sector. SKYWARD uses GIS software to systematically analyse the potential of every building to be extended upwards without changing the character of the skyline.

Knight Frank analysed 3D spatial data from Ordnance Survey, and cross referenced it with data from Land registry to assess ownerships as well as Historic England data in order to filter out listed buildings[14]. Knight Frank's study found that 41,000 new dwellings could be built in Zones 1 and 2 of Central London, just through utilising roof space.

Another working example of the private sector working alongside the public sector to exploit useful geospatial data is GetRentr[15]. GetRentr tracks regulation from across the UK that has impact on the private rented sector. Our sister organisation, ARLA Propertymark[16] is in a partnership with GetRentr that provides ARLA Propertymark members with a Licensing Database. This Database collates information from Local Authorities to provide a comprehensive list of upcoming property licensing schemes and consultation events. GetRentr provides this data by working collaboratively with Geovation, Ordnance Survey and HM Land Registry.

To incentivise the private sector in the development of geospatial infrastructure, we would recommend that the commission considers allowing GIS specialists access to data that is not publicly available or licensable. The commission could also consider interoperability between the public and private sector where both parties benefit from sharing data, such as with GetRentr.

[13] https://content.knightfrank.com/research/1400/documents/en/skyward-2017-5111.pdf
[14] https://www.knightfrank.co.uk/blog/2017/11/15/more-than-40000-new-homes-could-be-built-on-londons-roofs
[15] https://getrentr.com/
[16] http://www.arla.co.uk/

Q12. Do you face challenges when working with geospatial data from across the public sector? If so, what are they and how could value be better released? Are there any technical remedies or standards that could be adopted to improve the interoperability of geospatial data? Please provide supporting evidence of what these remedies could help to accomplish.

There needs to be a singular platform used for GIS mapping in the public sector across the UK. Geospatial data from across the public sector has many inconsistencies. Due to the fragmentation of data provided by devolved authorities, some GIS maps are full of useful layers and localised information, whereas others lack data entirely. This means that content across the UK is inconsistent, as is the software used by the Local Authorities making use of GIS maps.

A platform such as ArcGIS[17] should be adopted to marry existing geospatial data from the public sector, this would ensure consistent data mapping and a standalone form of software that is recognisable across the UK. ArcGIS allows for the creation of maps, sharing and community collaborating and is ultimately used to analyse data. The Government are already familiar with ArcGIS, as the Cabinet Office used this software to create 'Find Me Some Government Space' – the first public-facing GIS developed by the Office to improve public sector transparency[18].

We believe that through the creation of a singular platform, operability of public geospatial data will be improved. This will be achieved by removing the complications involved with different software being used for different devolved areas. By removing inconsistencies, it makes understanding GIS software simpler. This would allow those operating across the UK to navigate the data with ease without having to learn how to use multiple forms of software within the public sector.

Q13. How can the Geospatial Commission act as a more effective customer for geospatial data on behalf of the public sector?

It is not applicable for us to respond to this question.

Q14. Are there any additional geospatial datasets, from the other partner bodies or other sources, that the public sector would derive significant benefit from having access to, that might have novel and valuable use cases? What would that access look like?

It is not applicable for us to respond to this question.

[17] https://www.esriuk.com/en-gb/arcgis/products/arcgis-online/overview
[18] https://e-pims.cabinetoffice.gov.uk/government-property-finder/Home.aspx

Q15: How can we best develop a single UK strategy, ensuring alignment between the individual strategies across the UK while still allowing for regional variations?

The partner bodies of the commission should further integrate their data and ensure data sharing from other public bodies to create an aligned and standardised strategy across the entire UK. Ordnance Survey and Coal Authority hold data for England, Scotland and Wales and HM Land Registry only for England and Wales. As aforementioned in Q5, the National Address Gazetteer only covers Great Britain. Consequently, the commission will have to consider how best to work with the corresponding devolved authorities not covered by partner bodies.

These are the further bodies that we believe the commission should consider working alongside to develop a single UK-wide strategy:

- Land Register of Scotland from Registers of Scotland
- Land Registry for Northern Ireland from Land & Property Services
- Pointer from Land & Property Services
- OSNI from Land & Property Services
- Geological Survey of Northern Ireland (GSNI)

It is imperative that all areas of the UK work together to deliver the geospatial strategy to ensure that the UK becomes a figurehead. The commission will need to consider how a singular strategy would apply to the whole of the UK when in some of the bodies there is a lack of representation. In the charter for the Geospatial Commission, it denotes that it will coordinate with the Devolved Administrations without usurping their powers or impinge on their relationships with public and private sector bodies. Thus, the commission must make consideration of how best to gain relationships with the above bodies without contradicting the charter.

The commission should take inspiration from the EU INSPIRE Directive[19] in formulating a single UK strategy. Whilst this strategy accounts for environmental spatial information, it enables the sharing of this information across public sector organisations as well as allowing public access. This model allows for regional variation but ensures a single standard that can be understood across the member states. We believe that a similar strategy would work in aligning individual strategies across the UK whilst still encouraging regional variation. An existing example of this being Stamp Duty. Stamp Duty is collected at a national level, but the housing market is made up of differing regional markets, resulting in the criteria for paying Stamp Duty being different across the four countries of the UK.

Q16: How can we best ensure effective local authority coordination and sharing of best practise, using location data to better deliver public services?

It is not applicable for us to respond to this question.

[19] https://inspire.ec.europa.eu/

Q17: As a result of this analysis, we are prioritising the exploration of possible initiatives in the high-value categories identified:

- **property and land**
- **infrastructure and construction**
- **mobility**
- **natural resources**
- **sales and marketing**

What are the existing or potential geospatial applications which could be scaled-up or developed in order to capture economic value? (We would particularly welcome responses from industry and other bodies engaged in these sectors.)

To exploit the economic benefits of geospatial applications, broadband maps created through Office of Communications (Ofcom)[20] data and Esri marketing and business tools should be promoted for use in estate agency, to encourage property sales and simplifying decision making.

A broadband map of the UK will encourage residential and commercial property sales. Data provided to the Financial Times by Ofcom[21] has been used to produce a broadband map that highlights the disparity of internet speed across Great Britain. Whilst this study highlighted how even in city centres there is issue with internet speed, this data is useful for prospective property buyers throughout the UK.

A study by broadbanddeals.co.uk indicated that 88% of respondents would be put off buying a property where there was slow or poor broadband connection, and the average homebuyer would be willing to offer an extra £6,500 on a property guaranteed to have excellent internet speed[22]. Considering this, datasets held by Ofcom are of benefit to estate agents and their clients. Scaling up this data for across the UK would aid in finding the preferential location for a prospective home buyer, speeding up decision making and the home buying process.

A broadband map will aid in the decision making of commercial buyers for businesses. In rural locations businesses often find their options for high-speed broadband prohibitive. Through identifying a location on a broadband map, commercial buyers will gain more clarity on what their requirements for broadband will be depending on location – this could mean choosing a better suited location where the business would not be required to set up their own high-speed line or being more aware of what they will have to do to achieve high internet speed.

Instead of focusing resources on attaining an adequate internet speed, businesses can focus on starting their business up from the new location straight away and direct their revenue towards hiring staff who will in turn make further contributions

[20] https://www.ofcom.org.uk/home
[21] https://ig.ft.com/gb-broadband-speed-map/
[22] http://www.naea.co.uk/news/august-2017/broadband-essentials/

to the wider economy. Additionally, for businesses that set up their own internet service there is further economic benefit as they can become an Internet Service Provider (ISP) themselves. By becoming an ISP, it will encourage further buyers into the area, consequently bringing more income into the local economy and encouraging further property sales.

To enhance marketing tools and market research for estate agents, the use of GIS software should be promoted. We believe that most of these benefits currently lie within private sector applications that are optimised specifically for business.

Esri Demographics[23] is used to provide insight on the population and can thus be used to effectively target consumers as well as to source property that fits the criteria of clients. The software allows for targeted allocation of resources in marketing and takes away time from conducting in-house market research of local areas, where the GIS software collates data from many existing sources.

ArcGIS Business Analyst[24] provides users with a map-based means to segmentation. Through analysis of demographics, the map layers allow users to identify trends of specified demographics in the area. Through better allocation of marketing resources, estate agents will be able to minimise outsourced marketing as the software brings it in-house. These maps can be used to create compelling infographics to use in property sales, and to make clients more aware of the local area.

Both technologies are used extensively in real estate marketing in the United States, and we believe it would be beneficial for estate agency marketing in the UK too. Engaging and visually appealing media will encourage clients to use these agencies themselves, going some way in aiding in customer retention and loyalty where the marketing produces results.

Q18: Are there any other areas that we should look at as a priority?

We do not believe that there are any other areas that the commission should look at as a priority.

[23] http://www.esriuk.com/arcgis-content/demographics-and-lifestyle
[24] https://www.esri.com/en-us/arcgis/products/arcgis-business-analyst/overview

Q19: What are the main potential private and public sector innovations that will rely on the use of geospatial data to rollout, and are there corresponding regulatory challenges?

The main potential innovations that will rely on the use of geospatial data to roll out will be the Digital Log Book (discussed in Q7), and a public register of properties owned by overseas entities, which will be discussed further in this question.

Through the introduction of a property Digital Log Book, the commission needs to consider how a geospatial data rollout will correspond with General Data Protection Regulations (GDPR) and the Data Protection Act 2018[25]. Information identifying personally owned property falls under GDPR – and geospatial data in property often reflects property ownership. Therefore, we believe a digital property log book should be a log-in service, only showing details and information to those who have permission to, consequently providing a protection for the contained personal data.

GIS in property sales improves communications between estate agents and consumers regarding Consumer Protection Regulations by offering estate agents simpler access to information that may influence a sale. This will impact on the Consumer Protection from Unfair Trading Regulations 2008[26] which placed more responsibility on estate agents to provide information at the point of marketing where it was traditionally a task of conveyancers. Classically, this information (such as proximity to an operating railway line) would be physically obtained and analysing existing GIS data against property proximity absorbs much of the need to conduct checks for influencing factors.

Further, we believe that by introducing a property Digital Log Book, it is an ample opportunity to go further by introducing a compulsory 'How to Buy' and 'How to Sell' guide to complement existing 'How to Rent'[27] and 'How to Lease'[28] guides produced by the Ministry of Housing, Communities & Local Government[29]. These guides could be uploaded digitally on the portal for involved parties to access, in order to explain the differing roles of estate agents, surveyors, conveyancers and mortgage advisors and what to expect of each involved party.

One of the many arguments for using geospatial data in estate agency is to make decision-making easier. Consequently, by providing many factors that could influence a sale to a customer in a singular format, estate agents will have a comprehensive list that goes above and beyond factors that may influence a property sale allowing consumers to make better informed decisions. Additionally, providing this information to consumers in the Digital Log Book will raise consumer awareness and allow them to revisit all provided information.

The commission should consider the Draft Registration of Overseas Entities Bill[30]

[25] http://www.legislation.gov.uk/ukpga/2018/12/contents/enacted
[26] http://www.legislation.gov.uk/uksi/2008/1277/contents/made
[27] http://www.propertymark.co.uk/advice-and-guides/renting/england.aspx
[28] https://www.gov.uk/government/publications/how-to-lease
[29] https://www.gov.uk/government/organisations/ministry-of-housing-communities-and-local-government
[30] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/727915/Draft_Registration_of_Overseas_Entities.pdf

and the data collected on overseas entities owning property in the UK. There is a need for more importance to be placed on the verification of this information and how it relates to ownership of property and land in the UK. The data must be accurate and coincide with future technological change around buying and selling property as highlighted in this document.

Q20: How best can we make the UK's presence in the international geospatial world more visible?

Geospatial organisations and dataset holders should be promoted for their services outside of the UK to further advance the UK's presence in the international geospatial world. This has already been witnessed with Ordnance Survey MasterMap being recognised as a global exemplar; UK Hydrographic Office's ADMIRALTY being used on 90% of the world's ships[31]; and the prominence of the British Geological Survey worldwide.

Through the creation of a single UK standard, the UK can highlight its presence through exemplar collaboration and organisation. Whilst in other countries there are stellar examples of geospatial datasets and applications, even the most geospatial ready state does not have a singular platform which collates the data and layers consistently across the country.

We believe that by setting a global example, the new platform will act as a template for other countries to replicate in their own geospatial policies and also provide recognition for the best of the UK's geospatial developers.

Q21: Where should the UK be looking for points of comparison overseas? Who are the other international exemplars? What best practice is being modelled overseas that we can learn from?

Although the UK is second behind only the United States for geospatial readiness, there are further exemplary models and practices in the US, Germany and Singapore.

We believe that the commission should consider existing GIS technology in the US as a basis for combining OS Mastermap with HM Land Registry Price Paid Data. In the US, GIS land mapping company GeoThinq has created real estate investment heat maps for various states such as Florida[32]. This data is made freely available and marks properties by 'sales hotspots' and 'investment opportunity' through prices per square foot. The map also has an optional layer for commercial sales transactions. Users can choose what layers to apply to the map, which is useful for both potential investors for conducting their own research, and also real estate agents in attaining data visualisation for marketing purposes. In the UK, online property portal Zoopla has an existing GIS map with some of these factors[33],

[31] https://www.admiralty.co.uk/
[32] https://app.geothinq.com/
[33] https://www.zoopla.co.uk/heatmaps/

however it is in a simplified format.

The commission should consider creating a similar GIS API to privately owned TaxNetUSA[34]. TaxNetUSA is a licensed property information geospatial software that allows users to search for specifics in property and land. Users can discover property value, property equity, view floorplans and refine the search to only include owner occupied property. It is a useful tool for the real estate market as it allows in depth segmentation in marketing, down to the year the property was built and the year the owner took out their mortgage.

TaxNetUSA makes the full names of homeowners and their full addresses publicly available to view. This leaves homeowners open to receiving spam correspondence from any business or person who has searched the geospatial data in their area. In the EU such publicly available identifiable data has potential to breach GDPR, so although the software would be beneficial to replicate in the UK, the commission may need to consider the ethics behind such data and the consent of land owners.

Germany was ranked third for geospatial readiness, scoring slightly less than the UK. Since 2012 Germany has had in place legislation that allows all federal government spatial datasets, services and metadata available free of charge for both commercial and non-commercial use and reuse.

In the initial roll-out of geospatial data, the commission should consider replicating the German model of making publicly-held spatial datasets free to access and reuse. This would encourage sectors to make use of the data, and after an initial period – the commission could consider introducing fees for the services, allowing for reinvestment and upkeep of the public geospatial data. With this, users should have to option to garner additional information from privately held geospatial datasets through a generalised licensing agreement (either with full access or pay per click). Whilst in the UK there is a plethora of geospatial data held centrally, it is not necessarily open or accessible for third parties, adapting the German model will remedy this.

The partner bodies should work together taking inspiration from the Singapore Land Authority (SLA)[35], and create a singular portal that integrates various elements from the commission's partner bodies. Singapore is rated fourth on the Geospatial Readiness Index. The SLA combined the Land Office, Singapore Land Registry, Survey Department and Land Systems Support Unit and was formed in 2001. The SLA focuses on optimising state land resources for economic and social development, working alongside the Government in developing geospatial policies. Multiple disciplines come together to generate new ideas, insuring that geospatial policy is not insular to one industry. It provides various e-services, but notably an online portal where users can search and purchase land information such as property ownership, survey plans and road line plans. Along with the digitisation of the UK's land registration, the commission should consider integrating purchase features of state land in with Price Paid Data and Local Land Charges. A singular public sector portal aids in removing user confusion and increases operability.

[34] https://www.taxnetusa.com/
[35] https://www.sla.gov.sg/

Thank you for your time in completing your response to our call for evidence.

Any questions, please get in touch with the Geospatial Commission via geospatialcommission@cabinetoffice.gov.uk