HM Government

National Geospatial Strategy – call for evidence

August 2018

Contents





Foreword

The data revolution is changing the way we see the world and the way we live our lives.

Technologies such as artificial intelligence (AI), blockchain, cloud and edge computing are shaping how we access, use, move and store data about ourselves and our environment, while the connectivity of the Internet of Things and future 5G networks are making intelligent applications available anywhere and everywhere. Our modern industrial strategy, sets ourselves an ambitious challenge – to be at the forefront of this AI and data revolution. Our goal is to maximise these opportunities.

The availability of information relevant to location – geospatial data – combined with these technologies gives us a new level of insight and evidence about our place in the world, making it at once both larger and smaller. Changing technologies in the geospatial realm itself – live imagery from orbit; enhanced visual data resolution; more accurate positioning technology, and; crowd-sourced data – are making location data increasingly relevant for wider sectors such as finance, transport, housing, retail and many more. At the same time, disruptive technologies, such as drones and connected autonomous vehicles, will only be made possible by effective use of geospatial data.

Decisions about public and private sector investment in the networks and infrastructure necessary to support these technologies require geospatial data to create a holistic view of the local, national and international environments from land, water and air.

The increasing relevance of geospatial data and technologies and ubiquity of applications present a clear and valuable global economic opportunity. Building on our manifesto commitment to realise significant value from our land data, the government has established the Geospatial Commission at the heart of government to ensure that the UK is equipped to capitalise on this opportunity. The Commission will champion and help realise the social and economic value of geospatial data, through driving insight, innovation and investment in geospatial capabilities and technologies in the UK, working across both the public and private sectors.

It will do this by bringing together the well of location data that is already collected and curated by expert organisations here in the UK: Ordnance Survey; HM Land Registry; UK Hydrographic Office; British Geological Survey; Coal Authority and the Valuation Office Agency. These partners are central to the UK's geospatial future. The data they hold and provide is increasingly valuable outside of their traditional markets, and the

Commission will help make the most of this opportunity to build on our UK excellence. The Commission's scope is broader than these organisations, over all public sector geospatial data in the UK. It will also test where in the private sector there is a benefit in bringing together interests and approaches to unlock value more widely to support economic growth and productivity.

With technological and industrial changes of this scale, there are accompanying challenges and opportunities. Within the geospatial industry itself, the increasing availability of location data could encourage greater competition as long-standing geospatial businesses seek to adapt to compete with new market entrants from outside of the sector. And the emerging challenges of data security, privacy, network capacity, access and standards are now coming to the fore for businesses and government bodies alike.

But alongside these challenges, research has identified an opportunity of more than £6 to 11 billion for the UK economy if we can build on our excellence in geospatial data and technologies.

It is now the job of the Commission to map the future of location data for the UK. We will deliver a National Geospatial Strategy next year, and this call for evidence is the first step in the process to aligning our strategic interests with the value across the wider geospatial sector and beyond.

I would encourage you to take this opportunity to share with us your view of what lies ahead, the challenges and the potential, as we move together towards the next phase of an exciting geospatial future for the UK.

Chancellor of the Duchy of Lancaster
and Minister for Cabinet Office,
the Rt Hon David Lidington CBE MP

Introduction

The power of place

Geospatial information – data about where people and objects are in relation to a particular geographic location – is shining an increasingly bright light on our place in the world.

New and emerging geospatial and data-enhancing technologies tell us not only where our physical borders are, but also capture our cultural and environmental differences and help explain their origins. The imaging power of satellites, for example, combined with AI's analytic capability applied to big data can alert us to upcoming global events. These could be climate change, animal migration patterns and extreme weather conditions, and when they are coming our way.

These technologies can also be used to provide insights about happenings closer to home, and help to inform us in ways that we often don't realise. They can tell us where schools and transport links are, and how property prices differ, so we know where is best to buy and build houses. And we can access data about the fastest route to getting home by avoiding the unseen traffic jam, as well as getting a takeaway delivered to our door once we get there.

For businesses, geospatial data can be used to track integrated supply chains to help manage international business operations and logistics. It can inform investment decisions about the best location for a goods warehouse that supports an efficient delivery service or even manage our shipping lanes for transportation of goods and people. In the future, businesses will use this data to support rollout of new technologies such as drones, autonomous vehicles and 5G mobile networks.

The technologies that collect, store and make this data easy to access are growing in sophistication. Geospatial data is becoming an increasingly significant policy tool for government. We can plan the quickest routes for our emergency services, identify and tackle crime hotspots, assess care home provision in any given area, and even use it to inform rollout of our broadband networks so we stay connected in this digital world.

The potential economic and social rewards are large if we act to take advantage of this increasing opportunity. The global value of the geospatial sector is $300 billion and growing.[1] As geospatial data and technologies become more relevant and widely applicable, we want to make sure that the UK remains at the forefront of the geospatial revolution both at home and internationally.

1 GeoBuiz, 'Geospatial Industry Outlook and Readiness Index' 2018

Image of London from above

Work to date

In the UK, our geospatial ecosystem is complex and evolving. It has formed around our national geospatial assets, in particular:

- Ordnance Survey MasterMap that is universally recognised as a global exemplar
- UK Hydrographic Office's ADMIRALTY Maritime Data Solutions that is found on over 90% of the world's ships trading internationally
- the British Geological Survey that has provided geoscience surveys to over 100 countries

As the data revolution takes hold, developing technologies such as AI, blockchain and cloud computing provide new means of gaining intelligence and insights from all kinds of data. Applied to location data, there is a burgeoning opportunity to realise new value and spread the benefits across the wider public sector, as well as supporting UK innovations in the private sector. Innovations in the capture of location data are enhancing this opportunity. Initial analysis in 2017, published alongside this call for evidence, estimated that the value of private sector use from access to and use of geospatial data could be up to £6-11 billion p.a. The productivity benefits and economic value of public sector use cases and future technologies are as yet unquantified.[2]

To realise this and identify further value, the Autumn Budget 2017 committed to establish a new Geospatial Commission (the Commission). The Commission works in particular with, and providing strategic oversight to, the domestic focus of six Partner Bodies:

- Ordnance Survey
- HM Land Registry
- the Valuation Office Agency
- the Coal Authority
- the UK Hydrographic Office
- and the British Geological Survey

The Industrial Strategy reiterated this commitment in the context of a wider cross-government approach to drive UK productivity.

The Geospatial Commission will be an enduring, impartial body within the Cabinet Office, tasked with setting the UK's National Geospatial Strategy. We will champion and help realise the social and economic value of geospatial data. We will work across both the public and private sectors in the UK, driving insight, innovation and investment in geospatial capabilities and technologies.

The Commission is now fully forming, and will comprise of an independent Board of commissioners, expected to be appointed later this year. We will operate across and intervene in a broad range of geospatial-relevant areas. We will prioritise only those activities of highest economic and social value, providing evidence to support our activities. In doing so, we will work with our Partner Bodies that each have their own field of expertise to realise the opportunities (see next page). We will also work with other government departments and public sector bodies who are pursuing wider geospatial-related policies. Their activities may include planning reform, environmental policy, drone technology, building information management, or using geospatial and earth observation data to inform decision-making and wider innovations.

2 There have however been some studies made. Recent research from Innovate UK on the value of satellite-derived earth observation data to government indicated that government could treble direct value gains from greater earth observation use by 2020.

The six Partner Bodies

British Geological Survey is part of UKRI with an arms-length relationship with the Natural Environment Research council (NERC). It is the UK's premier centre for geoscience information and expertise.

Coal Authority is an executive non-departmental public body sponsored by the Department for Business, Energy and Industrial Strategy. It manages many social, economic and environmental impacts from historical mining in Great Britain.

HM Land Registry is the body that holds the state guaranteed register of ownership, interests, and mortgages and other secured loans against land and property in England and Wales. Its aim is to become the world's leading land registry for speed, simplicity and an open approach to data. The land register contains more than 25 million titles showing evidence of ownership for more than 85% of the land mass of England and Wales.

Ordnance Survey is Great Britain's national mapping agency. It carries out the official surveying of Great Britain, providing the most accurate and up-to-date geographic data, relied on by government, business and individuals.

UK Hydrographic Office is an executive agency sponsored by the Ministry of Defence. It is a leading centre for hydrography that collects, collates and provides marine geospatial data, products and expertise to support informed marine decisions, policy making and safety of navigation in the UK and globally.

Valuation Office Agency is an executive agency sponsored by HM Revenue and Customs that provides independent property valuations for local taxation (business rates and Council Tax) and to support some national taxes and benefits.

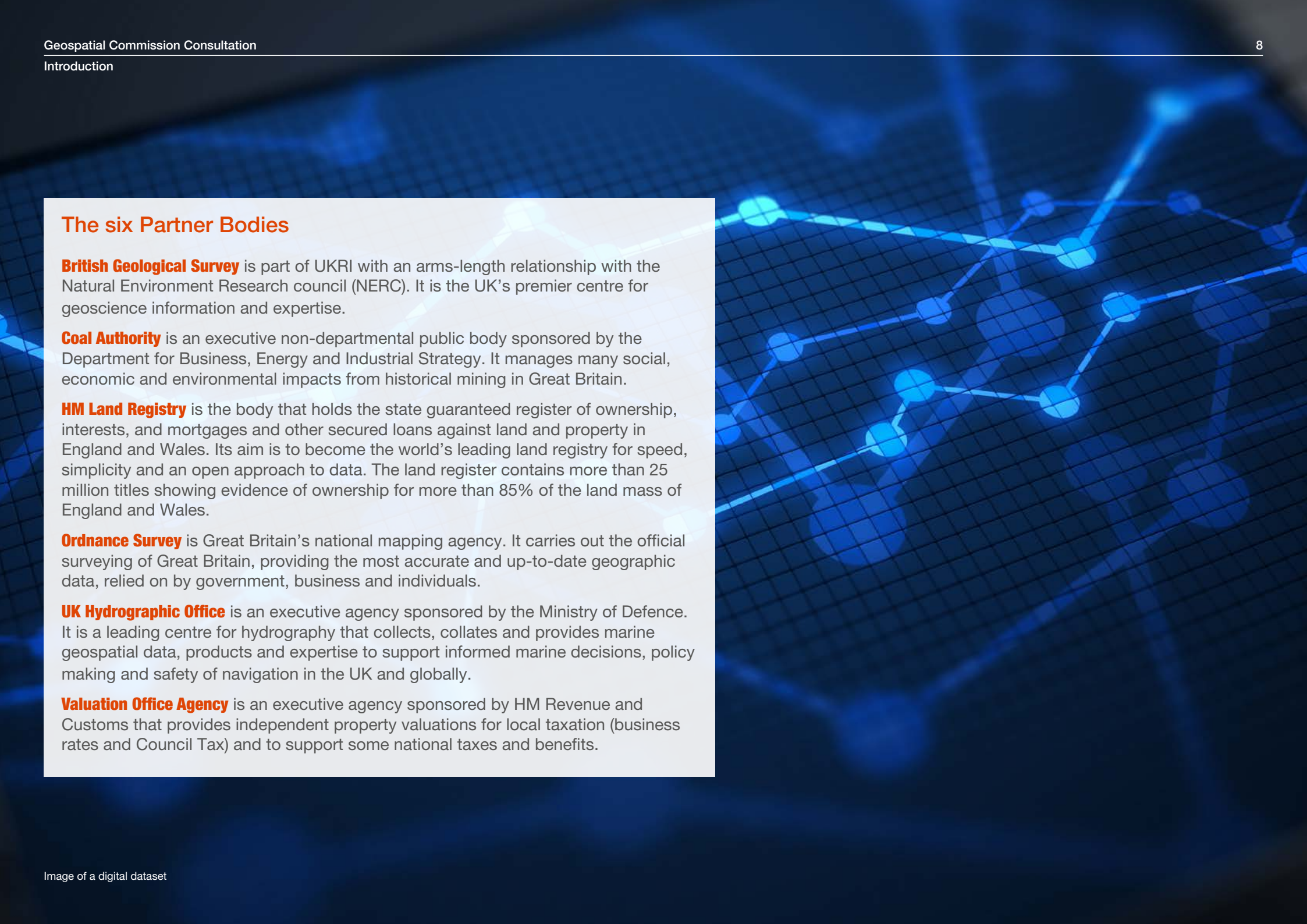

Image of a digital dataset

What will happen next

This call for evidence document will help inform the establishment of the Commission, in time for the arrival of our commissioners. We will then publish our first annual plan in spring 2019, and a longer term National Geospatial Strategy will follow.

We are consulting as widely as possible to improve our understanding of the emerging technological landscape and the needs of the geospatial sector and the wider sectors where geospatial data is of increasing relevance and value. This will help us to devise a strategic and targeted approach to our strategy.

How to respond

The questions set out in the Geospatial Commission call for evidence document can be found in the associated questionnaire.

The call for evidence will run until 24 October 2018. We welcome responses from any interested person, business, or organisation.

You can respond to this call for evidence by 24 October 2018 by emailing your completed questionnaire to: geospatialcommission@cabinetoffice.gov.uk

Or send a hard copy to:
Geospatial Commission
Cabinet Office
1 Horse Guards Road
London
SW1A 2HQ

Please note that although hard copy responses will be accepted, electronic responses via the completed questionnaire are preferred.

Privacy / Freedom of Information

The information you provide in response to this call for evidence, including personal information, may be subject to publication or release to other parties or to disclosure in accordance with the access to information regimes. These are primarily the Freedom of Information Act 2000 (FOIA), the Data Protection Act 1998 (DPA) and the General Data Protection Regulation 2018 (GDPR).

If you want information that you provide to be treated as confidential, please be aware that, under the FOIA, there is a statutory Code of Practice with which public authorities must comply and which deals, among other things, with obligations of confidence.

In view of this it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information, we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the department.

Emerging geospatial strategy

Scope

There are many possible ways of setting an approach to supporting growth in the geospatial sector and beyond. With constant technological advances the importance and demand for geospatial data is increasing and evolving so rapidly that defining it is a bit like trying to hit a moving target.

Our international counterparts are currently thinking about how to update their approaches, and are encountering similar questions. Singapore, for example, has just published its comprehensive geospatial strategy covering the next five years.[3] The US' Federal Geographic Data Committee has produced a strategic plan for their national spatial data infrastructure.[4] In the UK, Northern Ireland Executive published a 10 year strategy for geographic information in 2009 with the aim of making 'a spatially enabled society'.[5]

The leading geospatial industry body in the UK, the Association of Geographic Information (AGI), foresees how technological change will produce both challenges and opportunities for the geospatial industry. Its Foresight Report 2020 makes a choice about relevant developments from a business perspective. It captures five themes – Open, Big Data, building information modelling (BIM), Future Cities, and Innovative Technologies and Policy – that could have the most impact on our economy, environment and society over the next five years.[6]

Marine geospatial data is a core part of the geospatial ecosystem. The Government Office for Science's report 'Foresight: Future of the Seas' states that to understand the implications of changes to the sea and its potential impacts on land, there is a need for improved modelling of sea level rise and flooding. The report recommends enabling big data to drive innovation. This will ensure the UK has the necessary storage capacity, analytical skills, and co-ordination between sectors and within government to improve our understanding of the sea.[7]

The UK Space Agency (UKSA) and the Department for Environment, Food and Rural Affairs (Defra) lead on government policy for satellite-derived earth observation data.

3 Singapore Land Authority, 'Singapore Geospatial Master Plan', 2018
4 Federal Geographic Data Committee, 'National Spatial Data Infrastructure strategic plan', 2017
5 Land & Property Services Northern Ireland, 'Geographic Information Strategy 2009-2019', 2009
6 AGI, 'Foresight Report 2020', 2014 Government Office for Science, 'Future of the sea', 2018
7 Government Office for Science, 'Future of the sea', 2018

Image courtesy of Ordnance Survey

UKSA brings together industry, academia and public sector partners through their Earth Observation (EO) Advisory Committee and Satellite Data Infrastructure and Policy Co-ordination Group to inform strategy and policy. Defra is the UK policy lead for the Copernicus EO Programme and the international Group on Earth Observation. It influences programme development and co-ordinates user feedback to the EU Commission Committee and GEO Executive board. UK Space – the industry trade body for space – and the British Association of Remote Sensing Companies also bring together SMEs and wider industry to co-ordinate EO related activity.

All of these strategies look at the potential of geospatial data from different angles. Building on current thinking, 'geospatial data' is defined in our Charter and Framework documents (published with this call for evidence) as follows:

1. **Geospatial data:** Information where place is a key feature of its source and/or purpose for which it is used.
2. **Positional data:** Groups of individual datasets that usually have location as a secondary purpose, and which describes activity or physical assets grounded in a particular place.
3. **Geospatial identifiers:** Data that provides the means of anchoring positional data to core geospatial data.
4. **Geospatial services:** Higher-level insights and products, often involving layers of various types of spatial information.

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

Call for evidence – three key themes

The Commission's Charter and Framework set out our remit.

Taking this remit as a foundation, we have identified three high-level themes that could help our approach to setting a strategy. These themes encompass the potential that the data revolution has to transform the value of geospatial data, from both a public and private sector perspective. The themes focus on the key concerns and issues that have occupied the geospatial sector in the past through this new lens and the new technologies that will influence its future development. They 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 instil 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.

We look at each theme, asking questions about where evidence about the current geospatial data challenges and opportunities will shape future economic and social value and in turn our emerging strategy.

Supporting innovation in the geospatial sector

The businesses innovating in the collection and use of location data are the backbone of our geospatial ecosystem. Our first theme identifies the key priorities for ensuring that these business have the right skills, capabilities and access to data that they need to maintain their world-class status. It also tests the landscape for emerging technologies in the geospatial sector and beyond.

Developing skills

Producing and consuming geospatial data intelligently, and interpreting it to unlock economic value and deliver social benefits to our citizens, will require specialised skills. The government is already taking action to ensure our citizens possess the relevant digital skills. The Commission will also encourage the development of geospatial skills, promote better join-up of what is already available, and ensure that new and existing opportunities are better signposted to potential learners.

For some that might be signing up to a short online course or integrating geospatial into existing training, while for others that might be a postgraduate qualification. Our skills offer will need to be comprehensive in order to meet the diverse skills requirements of the geospatial sector, such as GIS, digital, and computer science. We will have to target wisely to ensure the appropriate level of training is on offer. While there are charterships such as the Chartered Geographer (CGeogGI) professional accreditation, new qualifications are emerging, such as the recently approved Geospatial Mapping and Science apprenticeships. There may also be a role for further certifications at lower levels which can build specific geospatial skills and improve their transferability between workplaces.

There could also be a benefit in ensuring access to the right resources and training materials, such as GIS systems and data in schools and academia.

The Commission intends to work with leading representative bodies including the Royal Geographic Society, Association for Geographic Information, UK Research and Innovation (UKRI), and the geographers within the Government Science and Engineering profession. We will also work alongside key stakeholders across industry, academia and the public sector to ensure the UK continues to develop its geospatial capability.

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?**

Promoting geospatial careers

We could offer more training and qualifications, but without demand we will fail in our aim to develop the sector. We also need to tell the story that we all already know – that the geospatial industry is a rewarding and exciting sector to build a career in.

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?**

Access to data

Many UK organisations hold key datasets that are valuable for businesses innovating with geospatial data.

Some of this data rests in the public sector, and we have already started making the case for improved access to it. For example, as announced in summer 2018, we have commitment to open up Ordnance Survey's highly detailed MasterMap, with key parts being made completely open under Open Government Licence, with the remaining data being made freely available up to a threshold of transactions.

We want to hear about what more we could do to improve access to access to key public and private sector location data and geospatial datasets to drive investment and release value. For example, opening up datasets under an Open Government Licence is one mechanism for doing this. Benefits have previously been seen in the success of CityMapper, which builds its services on Transport for London (TfL) open data.[8] We are keen to better understand: whether there are further opportunities, the evidence base supporting the case for these, and the potential impacts and where, for example, the Open Data Institute's insightful data spectrum should specific datasets be ranging from closed to shared to open.[9]

This is not only about data held in the public sector. The National Infrastructure Commission identified in their report 'Data for the Public Good' that one of the biggest challenges facing infrastructure operators is understanding where assets are located. This is a particular problem for underground assets such as water and gas pipes.[10] They cited that the lack of data on the location of underground assets costs the utilities sector £150 million p.a. in London alone, due to accidental strikes during excavation. In responding to this report, the government announced that the Centre for Digital Built Britain will set up a Digital Framework Task Group (DFTG) to set out a roadmap for a digital framework for infrastructure.[11] The Geospatial Commission will work with the DFTG to ensure the digital framework roadmap is informed by and consistent with the National Geospatial Strategy.

Q4 **How should we prioritise which geospatial datasets we target to increase access? Please provide evidence of why this would be of value, and how access or quality could be improved?**

8 According to a July 2017 report by Deloitte, the release of open data by TfL is estimated to generate annual economic benefits and savings of up to £130 million for travellers, London and TfL itself.
9 ODI, 'The Data Spectrum'
10 National Infrastructure Commission, 'Data for the Public Good', 2017
11 HM Treasury, 'Government response to Data for the Public Good', 2018

Ensuring that both public and private sector users have access to the world class geospatial data from our Partner Bodies is critical to unlocking the opportunities it offers. There are a number of different ways of providing improved access to data. These include free access routes for specific types of use such as public good, and innovation as well as opening data. OGL has the potential to improve access to data, which could improve its quality through: greater standards adoption, use of identifiers, enabling collaborative maintenance, and increasing timeliness. It also poses a number of challenges and risks that could impact on the quality and sustainability of these core geospatial assets, putting at risk the very value that we are trying to unlock for users. These are addressed more fully in the next section.

Addressing

Address data is one example of where it could be economically valuable to take a more collaborative and systematic approach to aligning interests to support access to data.

In the UK we have a long established addressing ecosystem with a range of interests, roles, and legal and statutory obligations associated with it. For example, there are different definitions, legal bases and uses of address data. The British Standard[12] defines an address as 'a means of referencing an object for the purposes of unique identification and location'. This often differs from the public perception of an address, which is most often its postal address. The different types of address all serve a purpose and all of these need to be taken into account where service delivery is dependent on them.

Street naming and numbering is carried out by local authorities under statute. Royal Mail create and manage the Postcode Address File (PAF), providing a comprehensive list of mail delivery points for the whole of the UK, and the most commonly recognised form of an address by the public. GeoPlace brings together both the postal – from PAF and the British Standard address – along with additional information from local authorities, Valuation Office Agency, and Ordnance Survey. This forms the National Address Gazetteer containing over 42 million accurate addresses for Great Britain.

Building on previous analysis, we are interested in whether there is evidence of economic opportunities that a more collaborative and systematic addressing ecosystem may provide in the context of technological development and increased data aggregation.

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

Future technology needs and opportunities

In an age of rapid technological change our data requirements will evolve and new opportunities for releasing value will be created. There are a range of new technologies and innovations including AI and machine learning that could enhance our ability to process and make sense of the data available. The government, through the Industrial Strategy, has already allocated £113 million from the industrial strategy Challenge Fund to support new research programmes that use AI, data and digital technology.

We want our world-class location data to underpin how geospatial data supports emerging technologies like drones, future 5G mobile networks and connected autonomous vehicles. And we want to understand from the market how to support development in the UK of geospatial innovations that allow for better collection of and access to geospatial data.

12 BS7666

Satellite-derived Earth Observation (EO), for example, concerns the gathering of information about the planet's physical, chemical and biological systems via satellite-based platforms. These include the world-leading Sentinel satellites launched as part of the Copernicus programme, Landsat, weather satellites, and an increasing array of commercial satellites. This is potentially a huge market with a growth in downstream services and derived data production enabled by the open data coming from Copernicus Sentinels and LandSat satellites.

Satellites allow EO data to be captured frequently across large areas of land, sea and atmosphere in the UK, providing a reliable and consistent data source. This data can be processed and through machine learning to provide change detection of environmental variables, conditions and characteristics over time.

Two of the challenges with EO are:

- providing analysis-ready data to allow a wider range of analysts to use this with other geospatial data
- how to store and archive data due to its size and volume of images

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?**

We will be focusing on how emerging technologies, within the geospatial realm and wider data-related developments, can increase the value of our geospatial assets.

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

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

Image courtesy of Ordnance Survey

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Enhancing the UK's geospatial assets

The UK holds world-class location and geospatial data, produced by internationally recognised leading geospatial institutions. These bodies include those within the Commission's formal purview, such as the UK Hydrographic Office and the British Geological Survey, and those in the wider public sector such as the Met Office. The UK Space Agency leads on policy and funding to build satellites and to enable access to satellite data, including developing the UK EO data infrastructure strategy.

Geospatial data and technology is clearly an area of comparative advantage for the UK. We have been independently ranked second out of 50 countries for 'geospatial readiness',[13] with many countries looking to work with and learn from our geospatial bodies to build and improve their own capability.

Ordnance Survey is recognised as an international pioneer of location data collection with some of the most detailed and frequently updated topographic maps in the world that are available both openly and commercially. The UK Hydrographic Office is a world-renowned centre of excellence for mapping marine features. Our world-leading Building Information Management (BIM) programme has been replicated internationally.

The Commission has a remit over all public sector geospatial data. We want to ensure the UK continues to be a global leader and attracts the geospatial businesses of the future by bringing together interests and approaches to provide better access to this valuable data.

Protecting and enhancing our data assets

The UK's geospatial ecosystem is a result of decades (and in some cases, centuries) of investment and expertise. This is in terms of the underpinning geospatial infrastructure, and the creation and maintenance of the geospatial data that is built on such infrastructure. However, we must not be complacent. With a rapidly changing technological environment, where accurate and timely geospatial data underpins the digital economy, we need to ensure that we protect and enhance the UK's core national assets.

To do this, the Commission's Partner Bodies and other public sector organisations must, alongside their core functions, adapt to the evolving geospatial environment and support the ecosystem and market to innovate

13 GeoBuiz, 'Geospatial Industry Outlook and Readiness Index' 2018

Image courtesy of Ordnance Survey

and grow. This means that their business models need to enable them to maximise the opportunity for users to gain value from the data, while also supporting the sustainable and and up-to-date development of the geospatial assets that they hold.

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

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 prioritise the development of to support the emerging requirements for geospatial data?**

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?**

As an early step to maximising the value of the geospatial data that the government holds, the Commission will support its Partner Bodies to deliver a number of enabling data projects. In bringing this group together for the first time, we anticipate there will be new opportunities identified. The initial projects will cover aspects such as:

- mapping the relationships between the geospatial datasets held to improve our understanding of potential synergies
- working towards improved ease of access e.g. through common licensing terms
- improving the interoperability between key datasets by developing unique consistent identifiers
- exploring the ways in which third party datasets could be integrated into existing data

By bringing together our Partner Bodies and tackling these issues at this point we are able to leverage their individual strengths to create a robust foundation on which future work can build. We will do this while providing valuable lessons about how best to maximise the value of data which will inform the development of our National Geospatial Strategy and the successful delivery of future projects.

The Commission will ensure that this work is aligned with other work on data use and standards, and properly exploits learning around best practice. To do this, it will seek to engage with key stakeholders throughout this call for evidence process and on an ongoing basis. These arrangements will be outlined in due course.

Standards

While the Commission's Partner Bodies' long history has provided us with a world class asset, it has posed a challenge when working with the data. Historically, this data was siloed, with organisations and data being created for a specific purpose (such as defence of the realm or resource management). As a result, the Partner Bodies developed the best datasets, standards, and routes for accessing the data that met their user base core objectives. Understandably, they did not necessarily always consider the interoperability of the data with that from other providers as the user demand was not there. This tendency can be seen throughout the wider public sector.

However, in recent years there has been an ever-increasing demand from a number of sectors to have a fuller view of the area in which they are operating. For example, the

use of geology, fluvial, topographic, and location datasets to understand and assess property insurance risk was a novel and innovative approach undertaken by only a couple of insurance companies a decade ago. It is now very much a business as usual activity for the majority of the market.

BGS have developed a widely used subsidence model for the insurance sector that integrates hazard data with other perils information to assist with underwriting and claims management.

This trend is not unique to either geospatial data or the insurance sector. The government's Industrial Strategy last year set out the ambition for the UK to be at the forefront of the data revolution. Geospatial data has a critical role in enabling large scale datasets – big data – to be connected and rapidly analysed to generate insights and innovation. To achieve this we need to ensure that data can be taken out of the silo.

The issues limiting greater use of geospatial data are not restricted to only our Partner Bodies, or the UK. The INSPIRE Directive[14] that entered force in 2007 sought to address some of these issues. It established an infrastructure for spatial information in the EU, and mandated that member states make spatial datasets available in a consistent format which come within the scope of the directive. Likewise, the Open Geospatial Consortium seeks to develop agreed standards to help improve the sharing of geospatial data internationally.

Encouraging collaboration

One of the critical roles for the Commission is to bring the six Partner Bodies together with a focus on interoperability and collaboration to maximise the opportunities of the data and expertise that they hold. We know this has been attempted before, with mixed degrees of success.

Following flooding events in 2007 and in 2013/14, joined up efforts were made by Centre for Ecology and Hydrology, Ordnance Survey, British Geological Survey, Environment Agency and Met Office to provide better information on resilience. Resilience Direct – led by Ordnance Survey – was a significant improvement and resulted in a joined up approach to tackling flooding through use of standards for the more effective use and integration of existing geographic and environmental data.

Similarly, the Natural Hazards Partnership established in 2011 provides authoritative and consistent information, research and analysis on natural hazards. This informs the development of more effective policies, communications and services for civil contingencies, governments and the responder community across the UK.

These are just a few examples of the collaboration that has occurred in the past, but has not always been taken forward and implemented into routine activities.

We want to: build on this, foster collaboration by default between the Partner Bodies, understand how this has worked well before, and learn from where previous collaborations have stumbled.

There were several things the previous initiatives had in common:

- they were nearly all led by the Partner Bodies
- in each instance the primary focus around which the Partner Bodies were brought together was around a public good, for which none of them had ultimate responsibility
- there were challenges when looking to scale up of the outputs from successful pilot studies to full production systems as the respective boards were unable to

14 Infrastructure for Spatial Information in Europe (2007/2/EC)

support investing in activities that were outside of their business remit set by their parent departments
- there was limited support from government to underpin and co-ordinate the activities of the Partner Bodies to allow them to deliver

The creation of the Commission provides an opportunity for us all to work more closely together. Our scope is wide as we are responsible for all government geospatial data not just that held within the Partner Bodies. We are therefore interested in opportunities to work with others in the public sector to bring together data and approaches to its access where there is economic and social value to be realised.

Q12 **Do you face challenges when working with geospatial data from across the public sector, and 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.**

The role of the wider public sector

The wider public sector has a specific key role to play in realising the geospatial opportunities both creators and users of geospatial data. Ensuring that the public sector has access to the core geospatial data that it needs to deliver effective and efficient citizen services both today and in the future is critical and will underpin the data that they in turn create.

Currently there are several public sector contracts in place: Public Sector Mapping Agreement with Ordnance Survey;[15] the PAF Public Sector Licence with Royal Mail;[16] and Aerial Photography Great Britain contract with the GB consortium, which is made up of GetMapping Limited and Bluesky International. Responsibility for managing these contracts alongside the setting of the Ordnance Survey Public Task has been transferred to the Commission.

We are intending to continue the work that was started by BEIS to renegotiate the current Public Sector Mapping Agreement. In addition we will also be considering the public sector's access to the other Partner Bodies' data as well as the current arrangements for accessing both PAF and the aerial photography. In order to deliver this, we will need be a highly effective customer on behalf of the public sector. We will need a strong focus on the outcomes that the public sector users of the data are seeking to deliver, and the geospatial data requirements they have in order to achieve them.

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

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?**

Geographic coverage

In developing the first UK Geospatial Strategy, we are working closely with the the Devolved Administrations (DAs) and their organisations to deliver a strategy that works for the whole of the UK. We want to learn from the experiences of the DAs, and to build on the excellent work they have done in this area.

15 The PSMA only applies to the public sector in England and Wales. The One Scotland Mapping Agreement between the Scottish Government and Ordnance Survey provides access for the public sector in Scotland. Responsibility for this agreement remains with the Scottish Government.
16 The Scottish Government have a parallel arrangement in place with Royal Mail covering the public sector in Scotland.

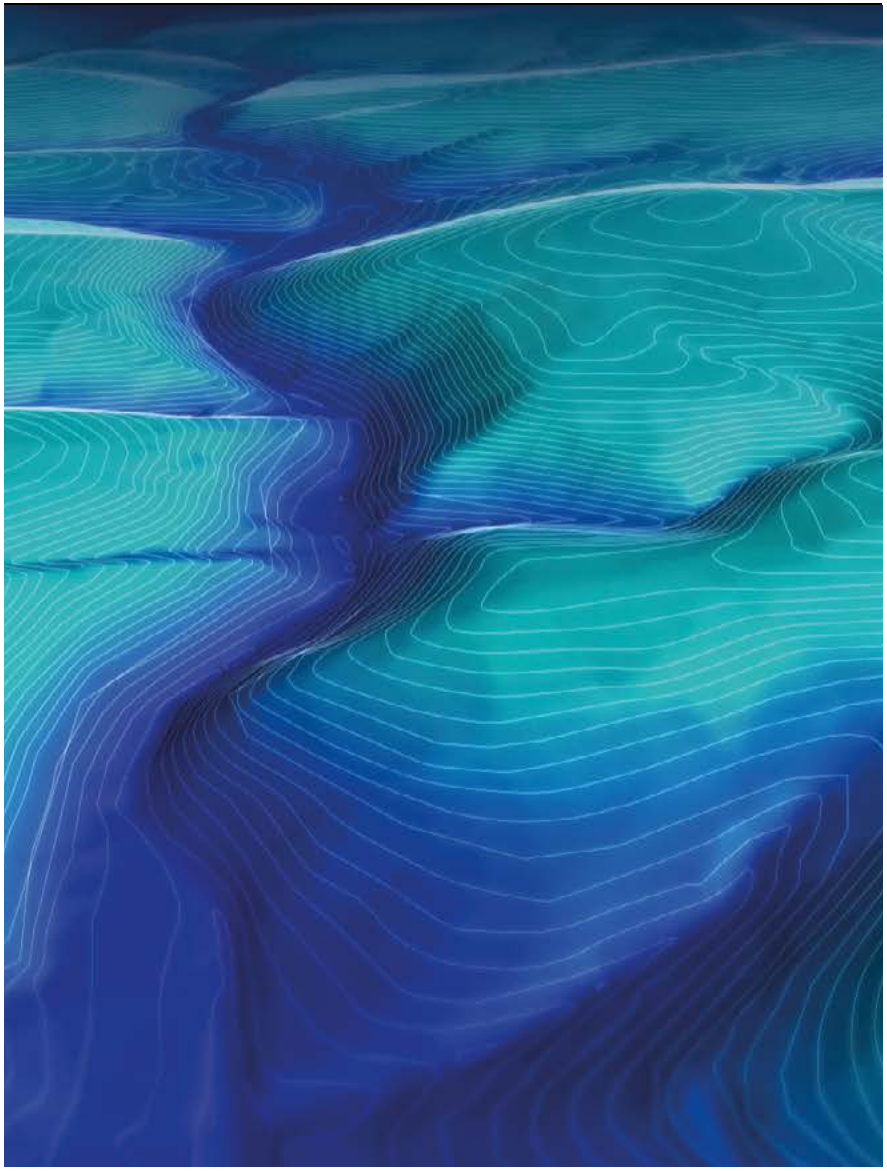

Image courtesy of Ordnance Survey

Northern Ireland, Scotland and Wales all have existing geospatial strategies and have central repositories through which they make public sector geospatial data available. This offers the potential option for creating either a single strategy for the whole of the UK or a co-ordinated approach to the strategy with each DA creating their own strategy around an agreed central spine.

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

Local authorities across the UK have some of the most direct experience of using location data to deliver public services, plan development and support businesses. They hold key geospatial datasets, such as planning and transport data. That experience can generate valuable insights to better use geospatial information to connect our communities and economy.

We need to ensure that there is better alignment and co-ordination between the local authorities to ensure we can deliver a strategy for the whole UK and works for our cities, towns, and rural areas.

Q16 **How can we best ensure effective local authority co-ordination and sharing of best practice, using location data to better deliver public services?**

Driving investment and productivity in geospatial applications

The increasing volume of geospatial data, coupled with technological development and a better understanding of how data can be used, presents new economic opportunities. Starting to unlock some of the potential value is one of the primary reasons why the Commission was set up. Achieving this will require collaboration across the Partner Bodies, government departments and wider public sector organisations – and for the public and private sector to embrace the possibilities that the data presents.

Most of the economic and social benefits will come from identifying and exploiting new products and services. With an £80 million budget over two years, a key objective of the Commission is to invest in projects that can demonstrate new approaches and help accelerate innovation and effective adoption of geospatial data-based applications in business and wider society.

One of the first tasks is to better understand where the most value lies and efforts should best be targeted. Estimating the value of data is notoriously difficult given inherent uncertainty in the rate of development and diffusion of new technologies and their resulting impact. To determine a potential 'size of the prize' and an understanding of where in the economy this value might be realised initial analysis was taken in 2017. This has been published alongside this evidence.

The work examined the nature of the opportunities from geospatial data through two lenses:

1. **The potential to create value from known private sector and public sector use cases.**
2. **How to enable an innovative geospatial UK environment that unlocks further growth.**

This initial analysis estimated that the value of these private sector use cases could be up to £6-11 billion per annum. Better use of geospatial data will also drive efficiencies and improvements in public services (for example through better routing of emergency services vehicles), though this opportunity has not yet been quantified.

Key sectors where we believe there is the highest latent value

Initial analysis identified five key categories of current activity where there would be the largest incremental value from private sector use cases:

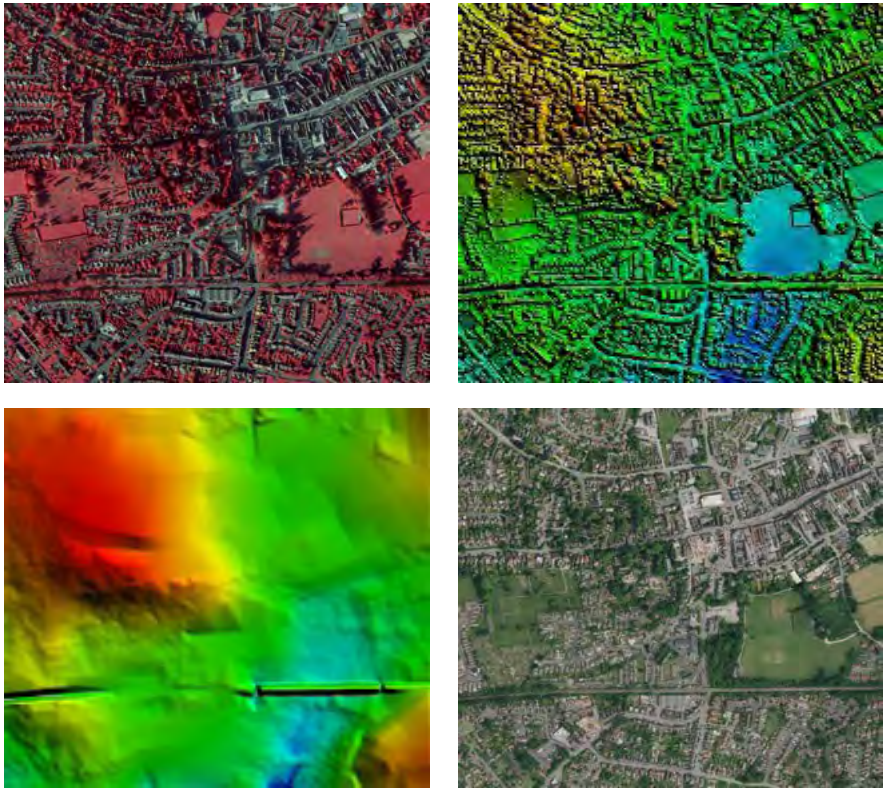

Image copyright Bluesky International Ltd and Getmapping Plc

- property and land – geospatial data used to support e-conveyancing, provide greater value transparency, location-aware insurance and digital surveying
- infrastructure and construction – geospatial data used to support optimal route locations for new pipelines, generators or power lines or signal towers to reduce planning times and maximise return on investment
- mobility – transport route optimisation using geospatial data, along with the use of unmanned drones
- natural resources – using geospatial data to support farming/automating farming equipment, precision agriculture, autonomous mining and exploration and remote monitoring
- sales and marketing – better adoption of geospatial data for location-based advertising, optimising retail footprints and end-to-end supply chains

These sectors represent a promising starting point for further work and potential future projects. The Commission intends to collaborate with relevant departments and bodies from across the public and private sectors to develop the key use cases. This is likely to include:

- considering property and land use cases such as the development of e-conveyancing or better identification of housing sites, feeding into wider work outlined in the Ministry of Housing, Communities and Local Government's policy paper 'Fixing our Broken Housing Market'
- exploring opportunities for geospatial data to support the improved delivery and operation of infrastructure, in line with the work of the Digital Framework Task Group and the Infrastructure and Projects Authority's work on 'Transforming Infrastructure Performance'
- working with DfT to establish the role geospatial data should play in support of their work on the 'Future of Mobility' and enabling and enhancing transport use such as drones or connected and autonomous vehicles
- examining how to maximise the value from use cases relating to the effective and responsible management of our natural resources, working with Defra
- building understanding across both central and local government of how geospatial data and applications can support better delivery of public services

This is not a comprehensive list, and further analysis will be required. We are also interested in better understanding other areas where there is significant potential value in utilising geospatial data.

We're aware, for example, that data-driven innovation in healthcare has potentially huge economic and social value, and we want to understand how geospatial data may be able to unlock this.

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)?

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

Beyond today's use cases, enabling a more innovative geospatial data environment could unlock substantial additional value in ways we cannot currently foresee. Developing the methodology for measuring value from public sector and future use cases is part of the next steps for analysis that the Commission will develop.

Privacy

The increasing reliance on geolocation data is generating significant opportunities for industry and providing consumers with innovative products. However, with the increase in the use for and collection of geolocation data there could also be implications for privacy and data security. These are being considered more broadly across government. For example, the Data Protection Act 2018 updated the UK's existing data protection laws for the digital age, setting new standards for protecting personal data and giving people more control over how their data is used. The government hopes that by building a strong data protection framework, this will help to build public confidence in the appropriate sharing of personal data. This is likely to increase the availability of data available to data-driven businesses so they can continue to create innovative products.

Regulation

The Commission will be an advocate for the sector, to make sure that the regulatory framework is adapting to assist the geospatial sector to best capture value. The government's £10 million Regulators' Pioneer Fund announced last year, aims to help regulators develop innovative approaches to get new products and services to market; the Commission will be interested in understanding how the regulatory environment might need to evolve to support new innovations, such as drones and connected and autonomous vehicles, to help ensure we grasp the potential of emerging technologies.

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

Collaborating with our international partners

The UK is one of the world's most highly advanced geospatial economies. However, the Geospatial Commission itself is a new concept and we are keen to learn best practice from similar bodies already in existence elsewhere in the world. For example, in Dubai their Land Department has created a blockchain system to help secure financial transactions on real estate. The Commission will also look to build on the strong existing international relationships of its Partner Bodies.

As Britain's national mapping agency, OS offers advisory services internationally, working with organisations, governments and other national mapping agencies to improve policy making and increase geospatial capabilities. They contribute to global conversations on geospatial technology, data trends and standards, and partner with other national mapping agencies to help save millions of pounds per year. They reduce carbon emissions, make the best possible evidence-based decisions, deliver effective public services, and plan new developments.

Through international programmes such as OneGeology with more than 120 international providers, BGS has led the world in interoperability for geoscience data. Currently BGS is testing a public-private partnership model in Africa to ensure more effective commercial uptake of data in the resource sector.

UKHO are currently working with the Foreign and Commonwealth Office's Maritime Policy Unit to create the government's International Oceans Strategy, which will be launched later this year. UKHO's aspiration is to expand their existing international marine geospatial programmes.

Through the international seabed mapping programme, UKHO are leveraging the UK's seabed mapping and ocean science expertise to support the prosperity of UK dependencies, Commonwealth, and coastal low- and middle-income countries. This aims to create the best possible marine dataset through a UK-led international seabed mapping programme to: support the development of sustainable 'blue economies', enable good policy making, and protect marine environments through improved understanding of the marine domain.

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

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?**

Annexes

Geospatial Commission Charter

This Charter articulates the government's commitment to the Geospatial Commission ("Commission"). It sets out the Commission's purpose and its principal outputs, accountabilities and duties. The Charter also sets out the balance of responsibilities between the government and the Commission.

The UK has some of the best geospatial capability in the world. The Commission will champion and elevate this strength by being a thought leader that coordinates the generation and facilitates the use of domestic geospatial data, products and services across the private and public sectors. It will be the UK's geospatial guiding mind, responsible for the UK's geospatial strategy aimed at unlocking billions of pounds of annual economic growth and consolidating the UK's position as the best place in the world to start and grow a data driven business. The Commission will demonstrate innovative solutions to identified strategic challenges and accelerate delivery of economic, social and environmental benefits derived from geospatial data. It will bring together data producers, particularly those in the public sector, to make the production and access to data more coordinated, useful and seamless. It will engage with the private sector with the full support of government.

Remit and purpose of the Commission

The Commission is an enduring, impartial entity that will set the UK's geospatial strategy and promote the best use of geospatial data to drive productivity, promote economic growth and improve the delivery of public services, while safeguarding considerations such as national security and intellectual property rights.

The overarching objectives of the Commission are to increase economic growth and improve social and environmental outcomes by:

- Setting cross-cutting geospatial strategy, policy and data standards;
- Promoting competition within markets for geospatial data, products and services;
- Improving accessibility, interoperability and quality of data; and
- Improving capability, skills and resources to support the growth of new and existing geospatial businesses and improve public services.

It will do this by:

- Demonstrating best practice engagement with the private and public sectors, including local authorities and front line services, to inform policy and improve productivity;
- Acting as co-ordinator within government for access to geospatial expertise, enabling public sector users of geospatial data to become more intelligent customers;
- Promoting the quality and the integrity of the UK's geospatial data;
- Promoting the success of organisations that produce and provide such data, championing the role they play in government and society;
- Increasing the number of data sets that are open and accessible for use by the public and small business in particular;
- Promoting the role of geospatial data in maximising value for the tax payer by improving policy making and the delivery of public services;
- Working with government departments and partner organisations to ensure that geospatial data production is co-ordinated with minimal duplication of effort and information; and
- Using the resources available to the Commission to support and develop innovative approaches to geospatial data use in conjunction with the public and private sectors.

Compact between ministers and the Commission

Providing the Commission (as defined in the Framework Document) acts in accordance with its Framework Document with government (which sets out its operating principles), ministers commit to supporting the work of the Commission by:

- Giving the Commission freedom to deliver against its objectives, once the geospatial strategy has been adopted as government policy;
- Undertaking not to interfere with its day-to-day decision making and recommendations around geospatial matters;
- Supporting the Commission in influencing or resolving conflicting interests amongst public and private sector providers or holders of geospatial data sets, especially where these organisations lie beyond the Commission's direct locus;
- Allowing the Commission to freely report and make recommendations to government and the private sector;
- Issuing a formal response to all the recommendations contained in the Commission's reports, stating clearly whether the government accepts or rejects the recommendations. The government will publicly respond within three months;
- Giving reasons where it disagrees with the Commission's recommendations, and where appropriate providing an alternative proposal for meeting the identified need; and
- Sharing relevant information with the Commission and responding to reasonable requests for new analysis to support the Commission's work in a timely manner, including information not in the public domain and that held by Public Bodies.

Revision of the Charter

The Commission, members of the Ministerial Steering Group and Devolved Administrations can propose changes to the Charter.

Changes will be made in consultation with the Commission, Partner Bodies, the Ministerial Steering Group, and the Devolved Administrations and ultimately approved by the Chancellor of the Duchy of Lancaster/ Minister for Cabinet Office as chair of the Ministerial Steering Group for the Commission.

It is expected that this Charter will only be changed in exceptional circumstances.

Geospatial Commission Framework Document

1 Introduction

1.1 This framework document ("Framework Document") has been drawn up by HM Government and the Geospatial Commission ("Commission") to describe:

(a) The operating principles and governance arrangements within which the Commission is expected to operate
(b) reporting and other requirements with which it is required to comply
(c) Other relevant aspects of the relationship between government, the Commission, its Partner Bodies as defined below, the Devolved Administrations and the private sector.

1.2 This Framework Document reinforces the remit and purpose of the Commission as described in its Charter.

1.3 The Commission will be the UK's geospatial guiding mind, aimed at unlocking billions of pounds of annual economic growth and consolidating the UK's position as the best place in the world to start and grow a data driven business. The Commission will focus on geospatial matters, defined as:

(1) **Geospatial data:** Information where place is a key feature of its source and/or purpose for which it is used;
(2) **Geospatial identifiers:** Data that provides the means of anchoring positional data to core geospatial data;
(3) **Positional data:** Groups of individual datasets that usually have location as a secondary purpose, and which describes activity or physical assets grounded in a particular place; and
(4) **Geospatial services:** Higher-level insights and products, often involving layers of various types of spatial information.

1.4 References to the Commission include its Board of Commissioners and the supporting unit of officials that work within it. The team of officials will be led by a civil service Director who will be the Accounting Officer for the Commission, and will also be a Commissioner. The Accounting Officer will be accountable to ministers and Parliament regarding the implementation of the geospatial strategy and spending of funds allocated to the Commission.

1.5 As part of providing strategic oversight of the geospatial ecosystem in the UK, the Commission will have a close relationship with six core "Partner Bodies" with diverse functions, organisational status and business models. These are:

(a) British Geological Survey;
(b) Coal Authority;
(c) Her Majesty's Land Registry;
(d) Ordnance Survey;
(e) United Kingdom Hydrographic Office; and
(f) Valuation Office Agency.

1.6 The Partner Bodies have different geographical jurisdictions and operate in a partially devolved context. The Commission will be sensitive to this complexity and maintain consultative relationships with the devolved equivalents of the Partner Bodies and the Devolved Administrations to ensure that the different legal and regulatory environments are reflected in their strategy and recommendations.

2 Operating principles

2.1 The Commission will achieve its overarching objectives as set out in the Charter by:

(a) Taking evidence-based decisions, and articulating clearly the rationale for such decisions;
(b) Creating a coherent geospatial strategy, which aligns to the broader economic and industrial strategy of the government, and which will consider the social and environmental benefits and impacts of its decisions;
(c) Setting measurable and objective targets against which it reports;
(d) Proactively challenging the status quo and managing duplication, particularly with regard to the way Partner Bodies and departments create, provide and procure geospatial data;
(e) Ensuring that Partner Bodies, their Accounting Officers, Devolved Administrations and departments, are appropriately consulted ahead of decisions that may impact them;
(f) Coordinating closely with the Devolved Administrations, taking into account the varying needs and legal frameworks across the UK, to share best practice and maximise coherence in devolved matters while observing existing decision making structures;
(g) Allocating its programme funding as efficiently as possible, with a view to prioritising projects which maximise that funding's impact and reflects the regional and demographic diversity of the UK; and
(h) Ensuring the Commission is accessible to those in industry and society who wish to engage with it.

3 Relationship with departments

Strategy and annual plans

3.1 The Commission will periodically present its strategy to unlock billions of pounds of economic growth to government. The timing is to be determined by the Commission, but under normal circumstances this would be expected to be every three to five years. The strategy must tie back to the objectives within the Commission's Charter document.

3.2 Ministers shall input in to the Commission's strategy, including proposed areas of work, before it is agreed. The Commission must seek departmental, Devolved Administration and Partner Body input during the strategy's development. The strategy must be approved by the Minister for the Cabinet Office ("CDL/MCO"), who will be supported by colleagues in the Ministerial Steering Group ("MSG"). The final strategy must be signed off via the usual write round process as all departments and their Arm's Length Bodies ("ALBs") will align with the strategy.

3.3 The Commission will also present an annual plan to the CDL/MCO and MSG for approval, which will describe how activities set out in the strategy will be implemented during the forthcoming year. The Commission will seek input from ministers, departments, Devolved Administrations and Partner Bodies in the development of the annual plan.

3.4 Once the strategy and annual plans have been set, ministers will not seek to change those plans.

3.5 In line with the terms of managing public money, the Commission will seek Treasury approval for novel or contentious spending, spending above delegated limits and where recommendations within the strategy may lead to a reduction in value, loss or gifting of public assets.

3.6 The Commission may refer issues to the MSG on an ad hoc basis, for example where there is conflict with or between Partner Bodies or departments or where this would facilitate a greater pace of implementation.

Governance

3.7 The Board of Commissioners will initially be classified as an Expert Committee and will be supported by a unit of civil servants. Together they will operate as the Geospatial Commission.

3.8 The Commission will:

(a) Operate within the terms of Managing Public Money, and other relevant government frameworks (unless exemptions are sought and are appropriate);
(b) Not seek new governance powers over the Partner Bodies. This does not preclude ministers' ability to add new Partner Bodies to the Commission's remit; and
(c) Be transparent in its governance arrangements, including:
   i. Ensuring that minutes of Commission meetings are published in a timely manner;
   ii. Monitoring and disclosing conflicts of interest for Commissioners and officials, ensuring such conflicts are acknowledged, taken in to account in decision-making, and that the Commission's reputation is protected; and
   iii. Publishing the details and backgrounds of Commission members and senior management.

Board of Commissioners

3.9 The Board of Commissioners, consists of:

(a) A Chair[17]
(b) Five Commissioners who are not affiliated with the Commission's Partner Bodies or civil servants ("Independent Commissioners");
(c) Two Commissioners who are employees or appointed representatives of the Partner Bodies, to be nominated collectively by them; and
(d) The Accounting Officer of the Commission.

3.10 To be quorate, one Chair, the Accounting Officer (or their nominated official from the Commission) and at least four Commissioners must be present. This must include at least one Commissioner that was nominated by the Partner Bodies. Where matters are not unanimously agreed, it is for the Chair to decide whether and how such decisions are implemented.

3.11 The Chair will ensure that:

(a) The Board of Commissioners meets frequently enough to ensure that momentum is maintained in driving the objectives of the Commission. The Board of Commissioners is expected to meet at least six times a year;
(b) There is an appropriate balance of background, diversity and expertise across the Board of Commissioners (subject to Ministerial approval);
(c) There is appropriate rotation of the membership of the Board of Commissioners to ensure that it remains up to date and relevant to the Commission's objectives, noting the fast-changing nature of geospatial data and its use (subject to Ministerial approval);
(d) Performance of Commission members meets the standards outlined in their appointment letters through the performance management process as established by the Accounting Officer;
(e) Conflicts of interest are appropriately dealt with and disclosed; and
(f) Working groups or sub-committees are established to augment Commissioners' and officials' specialist knowledge for the implementation of the Commission's strategy.

3.12 Observers from each of the Devolved Administrations will be invited to the Board of Commissioners' meetings. Where relevant, the Chair may also invite other observers.

Accounting Officer Responsibilities

3.13 The Director of the Commission is its Accounting Officer, and their responsibilities are set out in their letter of appointment.

3.14 Should recommendations made by the Board of Commissioners contradict the Accounting Officer's duties, the Accounting Officer shall refer the matter to the CDL/MCO and Cabinet Office Principal Accounting Officer.

3.15 The Accounting Officer must also be satisfied that conflicts of interests amongst members of the Board of Commissioners are appropriately disclosed and taken account of during decision making. Where the Accounting Officer has concerns, they must first raise the issue with the Chair, and make the Principal Accounting Officer aware should the issue not be resolved to the Accounting Officer's satisfaction.

17 Reference to the chair includes the situation where there are co-chairs.

Policy and Strategy Setting

3.16 The Commission will make private recommendations to the MSG for new policy and strategy. Where necessary, and where Ministers are content with those recommendations, the CDL/MCO will issue a write round to adopt the recommendations as government policy. The Commission and Cabinet Office will jointly publish information relating to new policy and strategy, once agreed.

3.17 Where issues are UK wide the Commission will consult with the Devolved Administrations to identify solutions that suit all parts of the UK. Where such matters are devolved or partially devolved the Commission will develop proposals, in consultation with the Devolved Administrations, that could be universally adopted by the relevant Administrations. Where mutually satisfactory solutions cannot be identified, the Commission will make recommendations to Whitehall ministers, making them aware of likely regional discrepancies. Devolved Administrations will continue to make their own decisions in line with what has been devolved.

Reporting

3.18 The Commission will:

(a) Report at least annually to the CDL/MCO, Permanent Secretary of the Cabinet Office and Devolved Administrations regarding its performance against its objectives
(b) Periodically publish reports relating to priority geospatial data matters. This will include:

i. Making recommendations to government and the wider geospatial community to drive economic growth; and
ii. Reporting on the state of key elements of the geospatial ecosystem, the government's performance against the published strategy and the progress that has been made in increasing economic growth and improving social and environmental outcomes through the use of geospatial data.

3.19 Reports by the Commission challenging existing government policy, the implementation of decisions in line with its agreed strategy, or the behaviour of private sector actors will not require further clearance from the CDL/MCO or ministers.

3.20 The Commission will deliver challenging messages candidly and use frequent reporting as a mechanism to maintain or accelerate the momentum of change in the geospatial ecosystem.

Information requests

3.21 The Commission will request information and new analysis from Partner Bodies, their sponsoring departments, and other government bodies, in order to be able to execute its duties. The Commission can expect that such reasonable requests will be accommodated (subject to any relevant legal or contractual obligations) and actively supported by ministers. The Commission must liaise with the relevant body before releasing any data publicly and respect relevant data protection, commercial and contractual obligations.

3.22 Such requests will be considered reasonable if they are proportionate and relevant, with the rationale for the request being sufficiently explained.

Appointments

3.23 The appointments of the Chair and the Independent Commissioners will be made by the CDL/MCO following best practice processes for public appointments. Once the Commission is fully established the CDL/MCO may require the appointments be considered as regulated public appointments with the process being subject to the Governance Code for Public Appointments. If agreed, these appointments would then be subject to the regulation of the Commissioner for Public Appointments.

3.24 The CDL/MCO, in consultation with the Chair, shall approve the appointment of appropriate candidates nominated by the Partner Bodies to be Commissioners. Partner Bodies must ensure that appropriate recruitment processes in line with government guidance are followed, where relevant.

Dismissals

3.25 CDL/MCO may dismiss Commissioners, as set out in their appointment letter, having consulted with the Chair.

3.26 The CDL/MCO has the right to dismiss the Chair of the Commission as set out in their appointment letter.

Remuneration

3.27 Matters of remuneration, of both Commissioners and officials within the Commission, are subject to Cabinet Office approval in advance of any recruitment process.

Revision of the Framework Document

3.28 The Commission, the CDL/MCO, members of the MSG and Devolved Administrations can propose changes to the Framework Document.

3.29 Any amendment, update or replacement of any provision of this Framework Document must be consistent with the Commission's Charter. Changes will be made in consultation with the Commission, Partner Bodies, CDL/MCO, MSG, and the Devolved Administrations and ultimately approved by the CDL/MCO.

3.30 It is expected that this Framework Document will be reviewed after one year to ensure it is fit for purpose. Subsequent changes will only be made in exceptional circumstances, and therefore only made infrequently.

4 Relationship with Devolved Administrations

4.1 As the Commission will set UK-wide strategy, it will coordinate with the Devolved Administrations but it will not usurp the Devolved Administrations' powers or impinge on their relationships with the public and private sector bodies. Partner Bodies will be expected to maintain their relationships with the Devolved Administrations and keep them informed of relevant discussions and decisions.

4.2 The Commission will meet with the Devolved Administrations regularly to discuss:

(a) Alignment of UK geospatial strategies, including those of the Partner Bodies, with Devolved Geospatial strategies;
(b) Collaboration on innovation projects; and
(c) Private sector engagement.

5 Relationship with Partner Bodies

Governance

5.1 The Partner Bodies should seek the Commission's advice, iteratively, on the development of the domestic geospatial elements of their Public Task (or equivalent), multi-year strategic plan, annual business/implementation plans and/or business cases for investment (where the investment is outside of the annual plans), to inform and ensure consistency with the government's Geospatial strategy. The Commission should have sight of final drafts before they are submitted to ministers or relevant approving officer.

5.2 Subject to 5.3 to 5.5 below, the Commission will have the final say on what falls within the purview of domestic geospatial data for the purposes of the public task, strategic plan, annual business/implementation plan, and business case. Commission involvement will not relate to the discharge of statutory duties, financial or other metrics which shall be a matter for the Board or management of the relevant Partner Body.

5.3 The Commission shall make the Partner Body Board or equivalent aware of any objections that the Commission has with regards to the domestic geospatial elements of the plans of the Partner Body. Where the Partner Body Board or equivalent proceed despite Commission objections, the Partner Body Board shall write to the Partner Body's Principal Accounting Officer and the Commission's Accounting Officer to explain their reasons for proceeding. These written explanations will inform advice to Ministers or the approving officer on this issue.

5.4 Ministers or approving officers responsible for the Partner Bodies will consider the Commissions and the Partner Bodies Board's views before approving these documents as part of their existing duties.

5.5 Where the Partner Body's board or sponsoring department, including Accounting Officers, have irreconcilable disagreements with the Commission, and all official level channels have been exhausted, the issue will be escalated to the MSG.

5.6 The Commission recognises that some of the Partner Bodies have important roles outside of the Geospatial objectives of the Commission. The Commission will work with each Partner Body to ensure that its engagement with the Partner Body will be as efficient as practicably possible and will minimize inadvertent, unavoidable delay in matters outside of the Commission's concern.

5.7 The Commission will work with each Partner Body to reflect the working arrangements set out in the Framework Document within the Partner Body's constitutional documents and processes. Working arrangements will take account of the differing nature of each Partner Body and the need for efficiency in Partner Body's business. The Commission is expected to work closely and iteratively with each Partner Body.

5.8 The Commission will work through partners to encourage the international adoption of UK geospatial data standards where there is scope, or the UK-wide adoption of appropriate international standards, while respecting and championing the commercial autonomy of the Partner Bodies in international markets. Where Partner Bodies are aware that their international activities may have domestic geospatial implications, they will consult with the Commission. Where domestic geospatial matters have consequences for international or non-geospatial matters of the Partner Bodies the Commission must take this into account.

5.9 Unless otherwise mutually agreed, the Commission will meet with each of the Partner Bodies, CEO and Chair at least twice a year to discuss:

(a) Partner Body performance compared to the UK geospatial data elements of their Public Task, strategic plan and annual business plan, and any other significant UK geospatial data activities including projects, products, services, fee setting and legislation;
(b) The aspects of the Commission's strategy relevant to the Partner Body including geospatial data standards setting, licensing, opening data sets and funding for initiatives; and
(c) The Commission's role in promoting the activities and plans of the Partner Body as part of the Commission's own strategy.

5.10 The Commission will recognise and appropriately accommodate potential conflicts of interest between its role as government customer for geospatial data and the setting of the UK's geospatial strategy.

Customer relationship

5.11 Where appropriate, the Commission will take ownership of negotiating and managing relevant geospatial data contracts with Partner Bodies from the parent departments.

6 Relationship with non-Partner Bodies

6.1 To perform its duties and achieve its objectives, the Commission is expected to engage with a wider set of organisations than its Partner Bodies. The Commission will engage with these organisations confidently and assertively, and can expect the full, proactive support of the CDL/MCO, MSG and Partner Bodies in influencing and convening Local Authorities, regulators, regulated asset bases, government contractors and other private sector businesses. Where all other alternatives have been explored, the Commission may also propose legislative solutions to intransigent barriers for consideration by Ministers.

6.2 The government's geospatial strategy will be delivered by departments and their ALB's. The departments and their ALB's will have the opportunity to influence the strategy as it is developed, before it is agreed by the CDL/MCO and MSG and then will adopt the strategy by the usual write round process. Once it is agreed all departments will be held accountable for their part in the strategy's delivery.

6.3 The Commission will have oversight of government engagement with external parties on geospatial matters to ensure coherence with the geospatial strategy. Departments will make the Commission aware of all relevant enquiries, of a strategic or cross cutting nature.

7 Periodic Assessment of the Commission's Relevance

7.1 The Commission will periodically be critically assessed as to whether its form and influence are sufficient and appropriate to enable it to unlock the economic potential of geospatial data. The reviews will follow Cabinet Office Tailored Review or successor guidance.

7.2 The independent review team should report its findings and recommendations to the MSG and Devolved Administrations to ensure the full economic value of geospatial data is realised for the UK.

Summary of questions

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

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?

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?

Q4 How should we prioritise which geospatial datasets we target to increase access? Please provide evidence of why this would be of value, and how access or quality could be improved?

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

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?

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

Q8 How can geospatial data and applications be used 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?

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 prioritise the development of to support the emerging requirements for geospatial data?

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?

Q12 Do you face challenges when working with geospatial data from across the public sector, and 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.

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

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?

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

Q16 How can we best ensure effective local authority co-ordination and sharing of best practice, using location data to better deliver public services?

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)?

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

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

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

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?