

Summary: Analysis & Evidence

Policy Option 1

Description: Implement a licence regime for DSA databases

FULL ECONOMIC ASSESSMENT

Price Base Year	PV Base Year	Time Period Years	Net Benefit (Present Value (PV)) (£m)		
			Low: Optional	High: Optional	Best Estimate: 0

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate	0	0	0

Description and scale of key monetised costs by 'main affected groups'

Other key non-monetised costs by 'main affected groups'

The Department has estimated no direct or indirect costs to business as a result of the proposal as the licences will have the same terms and conditions as would be used under a contractual approach for putting a given set of DSA arrangements in place. The licence regime will make it easier for Ofcom to impose financial penalties against uncompliant firms, however such penalties do not qualify as a cost to business. In addition, the licence regime will enable Ofcom to introduce cost recovery fees. However, the better regulatory framework manual states that fees and charges are out of scope and under a new contract regime these charges would likely be added in anyway.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate	0	0	0

Description and scale of key monetised benefits by 'main affected groups'

Other key non-monetised benefits by 'main affected groups'

The key benefit of moving to a licence-based regime for DSA database operators is that it enables Ofcom to better manage interference to spectrum licence holders. This will also make it easier for Ofcom to open up further spectrum bands to such databases in the future and subsequently enable more firms to benefit from use of white space.

Key assumptions/sensitivities/risks

Discount rate (%)

The key assumption is that the conditions of the licences offered would be essentially the same as those that would be used under a contractual approach for putting a given set of DSA arrangements in place.

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:	In scope of OITO?	Measure qualifies as
Costs: 0	Yes	Zero net cost
Benefits: 0		
Net: 0		

Evidence Base

1. Problem Under Consideration and Rationale for Intervention.

Background.

Spectrum is a valuable finite resource. Many firms that hold spectrum licences do not use all of their allocated spectrum at all times and in all geographic areas. This unused spectrum is known as 'white space', and is a valuable but unused resource. There are many firms who would like to use this available spectrum for short periods of time in specific locations. However, without technology that knows exactly where the white space is at all times and can make this information accessible to interested parties, it is very difficult for Ofcom to allow access to secondary users on an ad hoc basis.

There is therefore potentially a significant untapped market for white space. The potential value of this market arises primarily from the economic activity generated by the use of spectrum.

Recently, technology has become available that can collate and present all the information on available white space in each location at any given point in time. This has inspired firms to create Dynamic Spectrum Access (DSA) databases to hold this information, from which they profit by providing information on available white space spectrum to potential users. Allowing businesses and consumers access to this previously unavailable data, so that they can use the available spectrum, will increase usage of the spectrum white spaces. Firms who wish to operate these databases can only do so in frequency bands where the regulator has authorised such use and need to obtain the necessary information about spectrum availability from Ofcom.

Pilot Scheme

In December 2013, Ofcom launched a pilot DSA scheme that involved 8 database providers operating in specified frequencies across the UK agreed with Ofcom. The purpose of the pilot scheme was to test the viability of third party databases as a spectrum management tool, in a controlled scenario on a temporary basis, and to better understand stakeholder interest in white space technology. As Ofcom did not have specific powers to appoint or license DSA database operators, Ofcom entered into contractual arrangements with database providers who demonstrated that their databases met certain requirements, and were able to provide the necessary operational parameters to the white space devices. Each provider was subject to the same terms and conditions of participation, i.e. the contracts signed with Ofcom were identical for all providers. The pilot scheme ran throughout 2014.

Dynamic Spectrum Access in the 470-790MHz band (the UHF TV band)

In February 2015, Ofcom decided to implement its proposals for use of the white space within the Ultra High Frequency (UHF) band from 470-790MHz (TV White Space), which is currently allocated for primary use by Digital Terrestrial TV (DTT) and Programme Making and Special Events (PMSE). Introducing DSA into this band enables white space devices to use these frequencies on a dynamic basis provided that they transmit in accordance with instructions from specified DSA databases. In the absence of legislation that would have allowed Ofcom to create a licencing regime for these DSA database providers, Ofcom has entered into contractual arrangements with 7 providers. These contracts stipulate the technical and operational details of how the databases are run, and only apply to the UHF TV spectrum band. Again, these contracts are uniform across providers, but contrary to the pilot scheme, these contracts are indefinite - they have no specified expiry date. Currently, 2 of these providers are operationally active in the UHF TV band.

How does it work in the UHF TV band?

DSA database providers receive the information about spectrum availability from Ofcom, who in turn receive this from spectrum licensees in the UHF TV band. A white space device seeking to access available spectrum would first consult a list of authorised DSA databases provided on Ofcom's website. It would then select its preferred database from the list and send to it parameters describing its location

and device details. The DSA database would then return details of the frequencies and power levels that the white space device is allowed to use. Under the existing DSA contractual arrangements for the UHF TV band, Ofcom have rights to obtain information from providers about white space device use for the purposes of interference management and spectrum management. Ofcom's primary concern is mitigating interference to incumbent licensees, and they believe this can be achieved without the need for interaction between databases. Database interaction could potentially be beneficial as a way of managing interference between white space devices, but Ofcom has taken the view, in the context of the UHF TV band, that it was not necessary to require this for the purposes of managing interference at least in the early stages of implementation. This was for the following reasons:

1. Ofcom did not consider that interference between white space devices was likely to be a problem in the early stages of implementation of the framework, given the density of white space devices initially was likely to be low and the permitted power limits for white space devices were designed to be cautious, making harmful interference unlikely.
2. In any event, in order for white space devices to coexist successfully with each other, it is likely that they implement polite protocols, such as "listen-before talk" used in Wi-Fi or frequency hopping used in Bluetooth. In such cases, it is unlikely that devices will transmit at the same time and at the same frequencies when in close proximity.

It is important to note that Ofcom have developed this strategy for managing interference based on the experience gained in the pilot schemes, the current UHF TV band databases, and a wealth of historical and technical expertise.

However, Ofcom has said that it would monitor the situation as the market develops, and if required might consider adapting the framework to further reduce the probability of interference caused by aggregation effects. If Ofcom did consider adapting the framework it would expect to consult separately on any amendments, in particular with database providers, if it considered likely that they would result in additional costs.

To note that the above applies whether the DSA regime is set up via contract or via a regulatory regime.

How would DSA work in another band?

If Ofcom decides to introduce DSA into another spectrum band (i.e. in addition to the UHF TV spectrum band) then this will be a standalone policy initiative. In this case, Ofcom will define a spectrum range and the DSA licence regime that is relevant to it, taking account of the nature of existing use and the prospective spectrum sharing environment in that band. A decision to introduce a DSA regime into new spectrum bands will not rely on, or affect, any DSA regime that might already exist (such as UHF TV white space). Such a decision would not affect database operators providing services in other bands, under existing DSA regimes. Existing database providers would be free to choose to become database providers in other spectrum bands where DSA becomes enabled, or not to do so. If they do not, then they would not be affected in any way, in particular they would not have to bear any additional cost.

The process for introducing a new DSA regime into a spectrum band, including setting the terms of the licences/contracts for database providers and considering any impact on existing spectrum licensees, would involve broad consultation on the policy, as part of which Ofcom would consider the impact of the proposals on all relevant affected stakeholders. This would be in line with Ofcom's statutory duties and with their current policy making best practices. As part of this, Ofcom would expect to consult publicly on the terms and conditions of the authorisation for DSA databases (alongside other relevant considerations to setting up a DSA framework in a particular band).

To note that the above applies whether the DSA regime is set up via contract or via a regulatory regime.

Impact on existing licensees

DSA has been introduced in spectrum where it is not in use by existing licensees at a given time and place, therefore it does not affect the spectrum which a licensed user is entitled to use under the terms of their existing licence. There will be no impact on the rights of existing spectrum licence holders. They will be able to trade their spectrum licences just as they could before the DSA regime was introduced.

In addition, Ofcom would put in place a set of coexistence rules, on which they would consult, with the goal of ensuring that existing users do not suffer from undue interference from the new use enabled by DSA. The intention of these rules is to create an environment in which there is no material impact on the value of the spectrum for existing licence holders.

To note that the above applies whether the DSA regime is set up via contract or via a regulatory regime.

Problem Under Consideration

Ofcom currently has no express statutory function to regulate providers of databases that can be used, as part of a DSA spectrum management framework, to provide information on spectrum availability to device users. Therefore, as is currently the process, Ofcom and database providers must enter into contractual arrangements relating to the sharing of spectrum information, and the way in which database providers may use this information to provide services to device users.

To authorise white space use in the UHF TV band, Ofcom has entered into contractual relationships with database providers. The contractual mechanism is being used because Ofcom has no express power to regulate DSA databases to manage factors such as interference. From a regulatory perspective, this is likely to prove problematic in the medium or long term if DSA is introduced into other frequency bands, because it means that Ofcom will be relying on contractual rights as part of its arrangements with databases for the purposes of managing interference.

Contracts provide no powers for Ofcom to take enforcement action in the form of the imposition of financial penalties against authorised DSA database providers who are non-compliant with the terms and conditions of operation. This limits the ability of Ofcom to impose effective deterrents on database providers for non-compliant behaviour. If Ofcom cannot effectively protect incumbent licensees from interference it could limit Ofcom's ability to introduce DSA into new spectrum bands in the future.

A licencing regime would be more efficient for Ofcom and for providers, and would provide Ofcom with more power to take enforcement action against non-compliant firms.

Rationale for Intervention

The aim of this policy is to introduce legislation that will enable Ofcom to authorise DSA databases to operate in specific spectrum bands (such as the UHF TV band currently used), with specific coexistence arrangements to manage the risk of interference to other users. The provision would allow Ofcom to introduce DSA into a particular frequency band, work out the relevant rule set and then authorise databases to deliver it. The regulatory framework for database providers will be clearer, as it will be defined under statute, and Ofcom will have greater powers to take enforcement action against non-compliant firms. There will therefore be greater certainty, reassurance and transparency to existing users within the market that co-existence is being effectively managed.

Importantly, had a licence-based approach been used in the UHF TV band, it would have reflected the same terms and conditions as have been used under the contractual arrangement in place today. However, under a licence Ofcom would have the ability to establish and enforce the conditions under which DSA databases are permitted to operate, including a power to impose financial penalties for breach of DSA authorisations. The power would be used as an effective deterrent against non-compliance with the terms of the authorisation while enabling Ofcom to act flexibly. Government does not consider that the existing contractual regime can provide this effectively.

2. Policy Objective.

This policy aims to provide for spectrum to be used more efficiently by enabling Ofcom to authorise databases that operate in specific bands, with specific coexistence arrangements to manage the risk of interference to other users. The Department wants to move from a system where Ofcom can agree contracts of use with each provider, to a regulatory system in which Ofcom grants licences instead. The

intended effect of the measure is to ensure that Ofcom has the necessary tools to deliver on its statutory duty in terms of efficient use of spectrum and interference management, and because of this open up new opportunities for DSA database use in the future. The proposal therefore is for:

Specific Policy Proposals.

1. Ofcom to be granted the power to authorise the operation of geolocation spectrum databases, for any relevant bands of spectrum, licensed or unlicensed. The databases would manage all appropriate aspects of dynamic spectrum access and the business running the database would be able to charge for the service they provide. This regulation will not give Ofcom the power to control the database providers' charges, nor does the Department believe that specific powers are required to allow database providers to charge for their service. The authorisation should therefore enable Ofcom to make provisions for the following:

- The scope of the database, for instance in which geographic locations it may be authorised to operate, and within which channels it may assign bandwidth;
- The terms on which it may operate including any conditions under which its operation must be suspended or cease completely;
- The functions and/or processes of the database which may be operated manually (i.e. through human intervention or discretion) or automatically;
- The technical and operational parameters which must be provided by devices to the database and by the database to devices in order for the database to identify spectrum as being available for use;
- The basis on which it identifies spectrum that is available for use by a device;
- The power to request, where appropriate, information on spectrum availability and usage from database providers to be released to Ofcom, or one or more third parties designated by Ofcom, at the cost of the providers;
- Provision for fees payable to Ofcom to cover their costs of authorisation, provision of information to the databases for the purposes of the calculation of the spectrum availability and relevant technical and operational parameters, information gathering and compliance monitoring;
- The spectrum that will be managed by the databases and associated terms of use.

2. Ofcom to be granted the power to manage spectrum availability information, specifically, to be able to:

Request spectrum users to provide spectrum availability information directly to DSA database operators. Ofcom already has statutory information gathering powers under the WTA (whereby licensees are required to meet the costs of this provision) and the operation of DSA currently requires incumbent licensees to provide spectrum availability information to Ofcom, which is then passed to DSA database providers, in order for them to be protected from interference. To clarify, this is information that is currently being requested in the TV White Space case. The effect of this power would not result in an increase in information requests; it would allow an unnecessary link in the chain to be removed, simplifying the process of information exchange, reducing costs to Ofcom (of packaging up and providing the info to database providers), while costs to the incumbent licensees would remain unchanged. Ofcom would also have the power to disclose, where appropriate, information on spectrum availability to interested parties, under specific terms and conditions including a payable fee where appropriate.

3. Ofcom to be granted the power to accredit third-party providers, including people or systems, who intend to provide Dynamic Spectrum Access database services, and place details of those databases on an approved list with flexibility to amend this. This includes:

The publication of an agreed list of qualifying databases, and the addition or removal of qualifying databases as and when required from that list.

4. Ofcom's powers regarding enforcement to be extended to include geolocation spectrum databases. The Department therefore wish to grant to Ofcom the power to penalise, by fines and/or by restrictions on inclusion on the list of qualifying databases as appropriate:

Active third-party providers of spectrum database services which are included in the list of qualifying databases but are found to be non-conformant with the terms of the authorisation, regardless of whether that database is using spectrum or not.

3. Description of options considered (including do nothing).

Do Nothing.

Under this option, no changes would be made to the existing legislation and Ofcom would continue to manage DSA databases in the same way, through contractual terms and conditions agreed with each provider.

Option 1. Preferred Option.

The preferred option is to implement the changes set out above, in full, through legislation. This option will move from a system where Ofcom agrees contracts of use with each provider, to a regulatory licencing system. Under this option, all firms who wish to operate databases in bands where Ofcom has introduced DSA, must obtain, from Ofcom, a licence to operate those databases (excluding those firms who are currently under contract with Ofcom in the UHF TV band). Firms running databases under the new regulatory system will face the same conditions of use as those that they would face if the DSA arrangements were put in place under direct contracts with Ofcom (which is how Ofcom would have to enable the DSA arrangements in the absence of a new regulatory system).

However, instead of a contract between Ofcom and database providers, the terms and conditions would be determined by Ofcom in accordance with a statutory framework, which would clearly set out the scope of the type of terms and conditions which Ofcom could propose. When putting in place a DSA framework, Ofcom would consult on the scope of the licence for database providers in the same way as it currently consults on terms and conditions for spectrum authorisations.

The Department considers this the only option that fully achieves all the goals set out in this document, enabling Ofcom to effectively manage spectrum interference. The Department does not consider any alternative to legislation a credible option.

4. Monetised and non-monetised costs and benefits of each option.

Do Nothing.

This option would make no change to the current legislative framework; firms that wish to provide a DSA database service would have to agree a contract with Ofcom. This represents the counter-factual scenario and therefore has no associated costs or benefits.

Option 1 - Preferred Option.

Potential Scope of Impact

There are currently 7 firms with contracts to operate DSA databases, of which two are currently active – these are all in the UHF TV band (470-790 MHz). Due to the absence of a regulatory licence regime, Ofcom agreed individual contracts with each of these firms (albeit on standard terms and conditions).

The new licence regime would not apply retrospectively to these firms, i.e. their contracts would still apply. However, after the new authorisation powers have come into force, Ofcom may consider, as part of a wider review of the TV Whitespaces framework in the future, which it has already said it expects to carry out in 2017, the option of terminating the contracts and moving the firms operating databases in the UHF TV band to the licence regime. This would be subject to consultation in particular with the firms involved and would not, in principle, result in a change of the terms and conditions of operation (although these could be changed as part of the wider policy consultation).

The new licence regime would apply, if and when Ofcom decide to implement a new DSA regime in another spectrum band, to any firm that wants to provide a database service in that band, whether these are new database providers, or providers that currently operate in the UHF TV band that would like to operate in the new band.

For new firms entering the market in the UHF band before the TVWS review is carried out (in 2017), it is likely that they would also operate under contract rather than a licence regime. However, if the 2017 review implements a licence regime in the UHF band, then firms entering the market in this band after the review would likely operate under a licence.

While more database providers might be interested in working with Ofcom to offer DSA services as the framework develops (whether in the UHF TV band, or in other frequency ranges in which DSA may be implemented in future), Ofcom do not think that it is likely to be the case that there would be a significant numbers of DSA database providers. As a high level estimate of the number of firms that could in future be operating DSA databases, Ofcom have estimated around 10-15.

Costs

The proposed option is to allow Ofcom to create a licencing regime for the operation of DSA databases. Importantly, this licence regime would only apply to firms who may enter the market in the future. The 7 firms that are currently operating databases in the UHF TV band would remain under a contractual agreement with Ofcom initially, but, as noted above, Ofcom may consider transitioning them to a licence regime as part of the review of the TVWS framework that it plans to conduct in 2017. This would be subject to consultation. It is important to note here that the licence regime will be no different to the contract regime in terms of the burden on firms. In other words, if the firms currently operating in the UHF TV band were moved to a licence regime from their current contract, they would not face any additional costs. Otherwise, these firm's contracts with Ofcom would still apply indefinitely.

This regulation does not change the way firms enter the market in a material way, in that firms must still be qualified by Ofcom before being given the spectrum usage information required to run the database. Under this framework, instead of arrangements with databases being subject to a process of contractual negotiations, the firms would have to obtain an appropriate licence from Ofcom.

Firms running databases under the new regulatory system will face the same conditions of use as those that they would face if the DSA arrangement were put in place under direct contracts with Ofcom (which is how Ofcom would have to enable the DSA arrangements in the absence of a new regulatory system).

Furthermore, the terms and conditions would be determined by Ofcom in accordance with a statutory framework which would clearly set out the scope of the type of terms and conditions which Ofcom could propose. When putting in place a DSA framework, Ofcom would consult on the scope of the licence for database providers in the same way as it currently consults on terms and conditions for spectrum authorisations. Therefore, there is less uncertainty for firms who are considering entering the market but would have previously been unsure of their potential obligations and conditions. This is covered in more detail in the benefits section.

There may be costs to business that breach the conditions set by Ofcom in operating DSA databases as a licence regime will provide the power to deliver statutory sanctions which are not currently available through a contractual approach. However, the Better Regulation Framework Manual states explicitly in multiple sections that financial penalties levied for non-compliance with regulation should not be counted in the EANCB.

In summary, it is important to note that although any firm can create a database, the information needed to populate that database (and hence to make it usable) is held only by Ofcom, and Ofcom also sets the terms under which radio equipment may operate on a DSA basis. Therefore, any firms that want to enter the market already must operate under the conditions set out in Ofcom's contract, thus the change to a statutory regulatory system, in all practicality, would not create any extra burden on business.

Reporting/publication costs

The contracts that Ofcom have signed with 7 organisations to operate as DSA databases in the UHF TV band contain provisions to make certain information about TV White Space (TVWS) usage available to them. The operators were fully aware of these provisions and have therefore taken the costs of fulfilling them into account. If Ofcom introduce a new DSA regime elsewhere, the requirements on TV White Space DSA database operators will not change (and in particular Ofcom will not introduce additional reporting obligations related to the new regime).

Ofcom will normally not hold the information that will be subject to the reporting/publication requirement. They would not know about actual usage of the DSA user (for example in the case of TVWS, this is the number of TVWS devices in the field, their location and other use characteristics), or information about the availability of spectrum for DSA spectrum users, and they may not be able to calculate availability themselves. Ofcom expect to need the information for their interference management duties or for developing spectrum policy.

Fees payable to Ofcom

Fees are not currently payable under the existing contract. In its statement introducing DSA into the UHF TV band¹, Ofcom explained that:

“In the first instance we are not imposing any charges on databases in respect of those contracts. This [the DSA regime] is an innovative approach to spectrum allocation and it is not yet clear what the potential uses will be or how much economic activity we can expect to see in the white spaces. Given the experience in the US, we do not expect to see large scale commercial use of white spaces in the immediate future, and consequently we are able to confirm that we would not levy any charges from database providers during the first three years from the introduction of the licence exemption. However, we may consider in future whether it would be appropriate for Ofcom to be able to recover its costs in making white spaces available by charging database providers, provided that this would not inhibit the development of the market. Ofcom would consult fully in advance of introducing any charge to database providers.”

This remains Ofcom’s position in relation to the existing UHF TV band contracts.

If Ofcom introduce fees for a particular DSA regime, they would be doing so to cover (partially or totally) the costs incurred by Ofcom or by other spectrum users in supporting the DSA regime. For instance, if provision of incumbent information to the DSA databases requires a significant investment on a new IT platform and the associated ongoing expenses, then Ofcom may want to pass those costs on to the DSA databases. Ofcom seeks to have the ability (but not the obligation) to charge fees in order to recover those costs. As noted in the extract from the UHF TV band statement above, they may decide to absorb the costs in order to facilitate take up of an innovative spectrum use, or for other reasons. This is a policy decision and will depend on the characteristics of the DSA regime being introduced.

Ofcom cannot sensibly provide guidance on the possible level of fees which might be charged in order to cover the costs of setting up and running a future DSA regime as this will be heavily dependent on the nature of band and its current users. Ofcom would expect to consult on the level of fees it would consider to be appropriate, before introducing such fees. It would decide on this having had regard to all relevant considerations, and considering the impact on database providers. Prospective database providers under a new DSA regime would take account of these fees when deciding whether to apply to be an authorised database provider. It also seems appropriate that, as the database providers and their users will be the beneficiaries from the new DSA regime, they should contribute to the costs of its creation and operation (there is also the danger, if costs cannot be recovered from the DSA database providers, that Ofcom is unable to put the DSA regime in place, despite the willingness of DSA database to pay these costs).

Firms currently operating databases in the UHF TV band do not currently pay fees to Ofcom under the current contract. If Ofcom wanted to introduce fees, then they would have to offer these firms a new contract. Alternatively, Ofcom could cancel the current contracts and move these firms to a licence

¹ <http://stakeholders.ofcom.org.uk/binaries/consultations/white-space-coexistence/statement/tvws-statement.pdf> para. 2.36

regime (dependent on the review in 2017), which may then include fees (again, this is not certain as it depends on the 2017 review). There is, therefore, a possibility that this policy could create additional burdens on the 7 providers with existing contracts. However, for new firms entering the market, or should new spectrum bands become available for DSA databases, Ofcom could choose to impose such fees under either a contract or licence regime anyway.

The fees charged by Ofcom would only be for cost recovery, ie to cover the cost to Ofcom of managing the DSA regime in each band. These costs include, for example, the costs of obtaining DTT data, and the ongoing incremental costs of running data extracts on the PMSE licence database and uploading it to a web-server. Ofcom are unable to provide a precise estimate of these costs as they are difficult to disentangle from wider spectrum management costs, particularly given the current nascent state of the DSA market. The better regulatory framework manual states that fees and charges are out of scope of the business impact target and EANDCB.

Provision of spectrum information to databases

Section 32A of the Wireless Telegraphy Act (WTA) gives Ofcom a statutory power to require spectrum users to provide them with information necessary to carry out their spectrum functions. Ofcom can also obtain some information from licensed spectrum users as part of the licensing process or under the terms of their licences.

In the absence of the proposed legislation, Ofcom could require incumbents to provide them with the information required for a DSA regime, and then they would seek to pass that information to the DSA database operators. The proposed legislation gives Ofcom the option to remove themselves from the loop – which reduces the complexity of the implementation as the information would be going directly to the database providers who would be using it.

If the information was passed on directly from incumbents to DSA database operators then the distribution model will change from one-to-one into one-to-many. While in principle this could result in an increase in cost to the incumbent, Ofcom do not think the increase would be material. Currently, spectrum users send the required information to Ofcom via email. The proposal would simply require users to send the email to database providers (of which there are currently two operating). This new system would not apply to PMSE users - they would continue to send information to Ofcom who would then distribute it to databases.

The proposed new power would allow Ofcom to require incumbent spectrum users to provide information directly to DSA database operators but it would not allow DSA database operators to themselves request information from incumbents. The aim would still be to ensure that the same information goes to all DSA database operators.

Ofcom would specify the nature and frequency of the data to be provided by the incumbent to the DSA database operators. They would do this on the basis of the requirements of the particular DSA regime under consideration - notably to mitigate interference to incumbent or other users, and to ensure efficient spectrum use overall.

Importantly, given that Ofcom already have the power to request information from spectrum users, this power makes no change to the effective regulatory landscape or the burden on those firms. Broadly the same reporting requirements can be placed on spectrum users whether under a contract or licence-based regime.

Ofcom also expect that the new legislation would put certain safeguards in place to protect the rights of incumbent spectrum users, for example similar to the safeguard in place under section 32B of the WTA which requires Ofcom to ensure that a demand for information is proportionate. Ofcom would specify all this after consultation with the affected parties, namely the incumbents and the DSA database operators, who are likely to be more informed about the best technical option for the provision of data.

Benefits

The main benefit of the proposed licence regime is that it enables Ofcom to more effectively manage interference to existing spectrum users. The biggest difference between a contract approach and a licence approach is the ability of Ofcom to impose statutory sanctions on non-compliant firms. This provides a strong disincentive for DSA database providers to act in a way that could lead to spectrum

interference. Ultimately this provides benefits to all spectrum users in those bands which DSA databases are introduced into, both current and future, by ensuring their usage does not suffer from interference. By ensuring Ofcom can manage interference effectively this makes it more likely that they will be able to introduce DSA databases into additional spectrum bands in the future, which has potentially significant economic benefits through freeing up currently unused spectrum. Greater confidence in Ofcom's ability to manage interference also provides greater certainty and clarity for potential users of spectrum, encouraging investment.

There may also be some benefits in terms of efficiency in applying to become a database provider under a licence regime as opposed to a contract regime. Licensing is commonly understood and accepted in spectrum provision and the additional certainty around agreements backed by regulation could encourage more firms to enter the market for database provision.

However, the potential benefits outlined above are uncertain, and the department has not attempted to quantify them.

In total, therefore, we estimate no costs to business, and no quantifiable benefits. Therefore, we estimate that this proposal will have **zero net cost to business**.

5. Rationale and evidence that justify the level of analysis used in the IA.

This measure has been previously validated by the RPC as suitable for the fast-track, following submission of an RTA (RPC reference: RPC15-FT-DCMS-2392). This final stage IA builds on the analysis in the RTA, the queries raised by the RPC in their assessment of the RTA, and the questions from the RPC in their Initial Review Notice. In particular, the RPC previously questioned the necessity of regulation to achieve the policy objectives – to address this we have brought out further how regulatory powers are needed to ensure databases operate effectively, including enforcement measures for non-compliance with conditions.

The Department consulted Ofcom on a number of factors, particularly relating to the assumption underlying the zero net cost conclusion. Ofcom also provided further information on how the current contractual system works and how it is similar / different to the proposed licence regime to answer various RPC questions from the RTA assessment and Initial Review Note. All of the information received has been integrated into this analysis.

6. Risks and assumptions.

The main assumption underlying the economic analysis is that the terms and conditions of the licences offered would be essentially the same as those that would be used under a contractual approach for putting a given set of DSA arrangements in place. This has been confirmed to us by Ofcom and therefore is not considered a risk.

7. Direct costs and benefits to business calculations (following OI3O and BIT methodology).

This measure is in scope of One-In-Three-Out (OI3O) and is a qualifying provision for the Business Impact Target (BIT). Through rigorous assessment of the potential costs and benefits to business, the Department have concluded that the net cost to business is zero. There could be an increased burden in the future on the firms currently operating databases, as Ofcom introduce cost recovery fees. However, the better regulatory framework manual states that fees and charges are out of scope. Therefore, the NPV, EANCB, and business EANCB are all equal to zero, and under the OI3O and BIT methodology, the proposal counts as zero net cost.

8. SAMBA

The conclusion of the cost benefit analysis is that there are no costs to business arising from this measure. We can subsequently conclude that there is no cost to small and micro businesses, and therefore no need to exempt them from this measure.