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Broadband Delivery UK

National Broadband Scheme for the UK: Supporting the local and community roll-out of superfast broadband

State Aid Guidance: Mapping

1. Why is mapping needed?

1.1 It is essential that local bodies carry out detailed mapping of the areas that are targeted by their local broadband projects to make sure public funding is used only in areas permitted under the umbrella aid scheme. If a local body does not have sufficiently detailed mapping of its target areas, it cannot satisfy the umbrella scheme criteria. Alternatively, if the mapping indicates that the wrong types of areas are targeted, the umbrella scheme criteria will not be satisfied in those areas. In either of the foregoing scenarios, the project may not be capable of approval under the umbrella scheme until any specific issues are resolved and this may result in considerable delays to the scheme.

2. What must the maps show?

2.1 The maps must show that the 'right' areas are targeted. By this we mean it must show the project targets only:

- basic broadband delivery in "basic white" and/or
- next generation access (NGA) broadband delivery in "white NGA" areas only.

2.2 Public funding for basic broadband in "basic black" areas and for NGA broadband in "black NGA" areas is prohibited under the European Commission's broadband specific guidelines and therefore also under this umbrella scheme. Public funding for basic broadband in "basic grey" areas and NGA broadband in "grey NGA" areas is also not supported under this umbrella scheme. If a local body map were to indicate such areas were targeted, this would be problematic as already explained above.

2.3 For more detail on the definition of areas please refer to **State Aid Guidance: Overview of the Scheme and Criteria for use.**

3. Where do I start?

3.1 The Commission has confirmed that local bodies may use BDUK baseline mapping data as a starting point for their detailed mapping exercise. It has also confirmed that

mapping at a postcode level will provide sufficient granularity of an area for State aid purposes. Please note that mapping at an exchange level is not acceptable under the BDUK umbrella scheme following feedback from the Commission.

- 3.2 In order to assist all local and community bodies, BDUK has already conducted a mapping exercise to identify at a postcode level all white NGA areas and basic white areas in the UK. This UK-wide baseline map is based on information from BT and KCOM (protected by a Non-Disclosure Agreement (NDA)) as to the location of its upgraded exchanges and cabinets capable of supporting fibre to the exchange services and commercially sensitive information from Virgin Media on the location of its cable network. Versions of these maps covering local areas have been made available to all local bodies (on the Huddle website) and are intended to be used as a basis for determining their target areas. This should also assist local bodies in the preparation of their local broadband plans when applying for BDUK programme funding. It is also anticipated that such information on which areas are suitable for intervention will be made available to community bodies too, e.g. for preparation of their rural community broadband toolkits, though subject to any constraints on BDUK under an NDA or more generally in respect of distributing commercially sensitive information.
- 3.3 BDUK will provide each local body with a set of Geographical Information System files, of which the most significant are the **postcode to cabinet mapping files**. For each of the postcodes (about 1.7 million across the UK) it indicates the number of premises with that postcode, the BT exchange and cabinet which serves that postcode or whether they are exchange-only lines, whether BT Openreach has announced a planned upgrade to FTTC/P for that exchange or cabinet, whether Virgin Media provides a superfast broadband cable service in that postcode, and some modelled estimates of distances and potential broadband speeds. The sources for this information are a combination of public sector mapping files, postal information, infrastructure data provided to BDUK by BT and Virgin Media (and, where relevant, KCOM and Digital Region) (some of which is commercially sensitive for competition reasons), and BDUK modelled information. Some postcodes are served by more than one cabinet and where BDUK holds this information the file splits postcodes between the relevant cabinets.
- 3.4 BDUK has also provided modelled estimates of the possible costs of upgrading individual cabinet areas in white areas to superfast next generation broadband on the basis of an investment gap model looking at the difference between discounted capital and operating costs over a seven year period and possible wholesale revenues over the same period. When this gap is divided by the number of premises in white areas, it gives an estimate of possible public sector costs per premises passed, allowing potentially lower subsidy options to be identified. For cabinet areas which are part white and part grey, using this denominator makes the cost-benefit analysis look relatively worse compared with similar cabinet areas which are all white. Since the model ignores some practical deployment issues (e.g. that cabinet upgrade choices are not independent of each other, or that new points of handover might be needed), these numbers are primarily to indicate relative likelihood of upgrade for planning purposes, with real cost numbers only becoming known during procurement.
- 3.5 BDUK recommends that mapping information is updated by requesting local operators to provide details of current and future areas of coverage via an Open Market Review (see State aid Guidance: Open Market Review) and once the information from this has been assimilated via a Public Consultation (see State aid Guidance: Public Consultation). Local bodies need to take care in assessing local operator's claims of current and future coverage and guidance upon this is set out below:-
- For existing coverage, assess if services do in fact deliver the advertised speed and/or coverage, are affordable¹ and if the range of services offered meets the range of services sought by users

¹ BDUK is working at present on the basis that access to basic broadband infrastructure is not affordable if the installation cost is £100+ and/or the rental price is £25+ and for NGA broadband infrastructure is not affordable if the

- For future plans, providers who indicate that they intend to invest in relevant areas in the next three years are required to prove that *"at least significant progress in terms of coverage will be made within the three-year period, with completion of the planned investment foreseen within a reasonable timeframe thereafter (depending on the specificities of each area and of each project)"*² In particular, local bodies may require providers to submit business plans, detailed calendar deployment plans, proof of adequate financing and any other type of evidence to establish the planned investment is credible. At present BDUK does not anticipate any other information being required of providers to demonstrate concrete investment plans beyond that signposted in the Broadband Guidelines. However, this is something BDUK will keep under review. As any other potential relevant information is identified, BDUK may update this guidance document.

4. **BDUK Mapping**

- 4.1 The BDUK map has been prepared and is being maintained by BDUK as national competence centre. BDUK will consult with Ofcom in relation to the map as appropriate. Ofcom has also agreed to review and comment on BDUK's approach to producing its map both now and in the future, should BDUK's approach to producing its central baseline map be refined.

5. **How up-to-date is the BDUK map?**

- 5.1 BDUK has agreed with BT Openreach and Virgin Media that they will regularly update the information they provide, and BDUK is updating roughly every three months the information it distributes every three months. BDUK provides the files to local bodies using Huddle, a secure cloud-based collaboration and file sharing platform. Local bodies are advised to contact BDUK to ensure they have the most up-to-date data before preparing any materials for publication based on the data. Please contact stateaidforbroadband@culture.gsi.gov.uk

6. **What does the map show?**

The black/grey/white indicative maps [NGBB.png, BasicBB.png] are created based on the MapInfo postcode modelled data supplied, using the rules detailed below. These maps however should be assumed just as a base case, and are intended to be improved upon and refined by local bodies based on their more detailed knowledge of the areas involved, and following their Open Market Review of relevant suppliers in the marketplace. (On this see **State Aid Guidance: Open Market Review Template.**)

6.1 **General**

Coverage is mapped at a postcode level for both NGA superfast coverage and basic broadband coverage.

Depending on the status of the majority of premises in that postcode, a White, Grey or Black status will be associated to each postcode. A significant majority is required to colour code a postcode Grey or Black, as all the rest of the premises in that postcode will **NOT** be eligible for **this** subsidy.

6.2 **Process for mapping NGA superfast coverage**

A premise is "NGA superfast grey" if:

installation cost is £200+ and/or the monthly rental price is £30 - £50+ Subject to local body justification. Note that these costs are based on retail products, not wholesale and exclude voice or any line rental required to be taken with a broadband service.

² Community Guidelines for the application of State aid rules in relation to rapid deployment of broadband networks http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2013:025:0001:0026:EN:PDFCommunity_Guidelines_for_the_application_of_State_aid_rules_in_relation_to_rapid_deployment_of_broadband_networks

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- It is declared by BT Openreach in their OMR or Public Consultation response which will allow verification of speeds in excess of 24 Mbps being achieved at a significant majority of its premises in the next three years;

OR

- It is in the “cable coverage area” declared by Virgin Media in their OMR or Public Consultation response;

OR

- In a coverage area of another infrastructure provider with appropriate qualifying NGA technology, the speed of a connection would be more than 24Mbps and compliant with the NGA Technology guidelines published by BDUK

If 2 or more providers can offer a service to a premise as described above, the premise becomes “*NGA superfast black*”. In any other case, where a premise cannot satisfy any of the above conditions, it has to be considered “*NGA superfast white*”.

6.3 Process for mapping basic broadband coverage

A premise is “*basic grey*” if

- If it is **NOT** on “Sub 2Mbps premise list” declared by BT Openreach in their OMR or Public Consultation response

OR

- If it is in the “cable coverage area” declared by Virgin Media in their OMR or Public Consultation response

OR

- In a coverage area of another infrastructure provider with appropriate qualifying NGA/basic technology, and the speed of a connection would be more than 2Mbps and compliant with the wireless guideline published by BDUK

If 2 or more providers can offer a service to a premise as described above, the premise becomes “*basic black*”.

If a premise is on the “sub 2Mbps premise list” AND is NOT in a “cable coverage area” and is NOT in a wireless coverage area (as described above), that premise becomes “*basic white*”.

6.4 Partial Coverage of a postcode by multiple Infrastructure Providers

In the situation where:

- a) neither Infrastructure provider has proven that it covering a significant majority of premises in a postcode
- b) there are 2 or more such providers in that postcode

The local body will have to take a working assumption on whether these coverage areas are overlapping or not and take a final decision on the colour coding associated to that postcode and should publish the assumptions made within these postcodes within its Public Consultation.

A Local Body may to choose to apply an appropriate mapping threshold where there is a proportion of unserved ‘white’ premises within a postcode.

In these circumstances, the chosen Supplier will determine during survey which premises can be targeted and which cannot due to the fact they are already covered.

- 6.5 In order for local bodies to reproduce the maps once local information has been added (for example wireless operators footprints added to the [Wireless_avail] column), the query used to produce the map data has been left in the folder [BGW map range.QRY] which can be loaded using the 'SQL select' command in MapInfo. The numbers generated by this query correspond to 0=White, 1=Grey, 2=Black.
- 6.6 The BDUK mapping information is designed to be a baseline and local bodies will be encouraged to verify this information at a local level. For example:
- An area may be designated as grey NGA on the basis of BDUK baseline data which relies on the assumption that BT cabinets in that area will receive FTTC when their exchanges are upgraded. It may be the case however that not all BT cabinets in the area receive FTTC. By undertaking further work, a local body may be able to draw this distinction, thus extending the number of white NGA areas that may fall within the scope of a local or community broadband project and thus receive an upgrade. Recent BDUK data indicates whether particular cabinet upgrades are part of BT's internal short-term planning, but BT may later decide to change these plans without notice.
 - Local bodies are better placed to identify alternative local broadband infrastructure in addition to BT and Virgin Media infrastructure. As a result, the number of white and/or grey areas may be reduced.
 - BDUK models broadband speeds on the basis of straight-line distances from exchanges and cabinets to postcodes (adjusted for an assumed 'wiggle' factor) and estimated rather than actual locations of cabinets. That may not however give a precise representation of reality for individual premises within an area. Market research and demand stimulation activities for example may provide better evidence of actual speeds in local areas and thus allow local and community bodies to better pinpoint their target areas.

7. Examples of BDUK maps

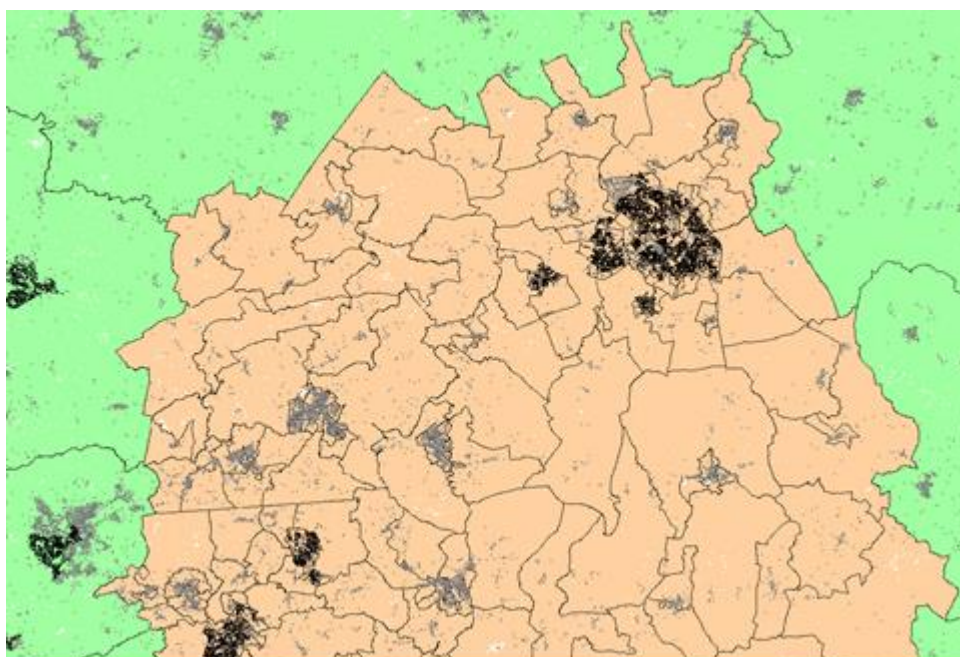
- 7.1 By way of example and to provide an overview of the information being made available by BDUK to local and community bodies, two examples of maps based on BDUK central baseline mapping data are set out below. They are: (i) a map of basic broadband coverage in North Wiltshire and Swindon; and (ii) a map of NGA broadband coverage in North Wiltshire and Swindon. These maps were based on information current as at 13 September 2011; they have since been revised but the principles remain the same.
- 7.2 White, grey and black dots mark the areas (at a postcode level) that are white, grey and black basic areas in the case of one map and that are white, grey and black NGA areas in the case of the other map.
- 7.3 The boundaries marked within North Wiltshire and Swindon (i.e. boundaries marked within the orange areas) are "lower super output areas"³ as defined by the UK's Office of National Statistics. Boundaries marked outside (i.e. boundaries marked in the green areas) show county and unitary authority lines.

³ "Super output areas" provide a basis for demographic and socio-economic neighbourhood statistics such as the census, which may be of interest to those looking at different demand for broadband. The full definition can be found at: <http://neighbourhood.statistics.gov.uk/dissemination/Info.do?page=aboutneighbourhood/geography/superoutputareas/oa-intro.htm>. Local authorities do not need to use LSOAs for their maps if they do not wish to.

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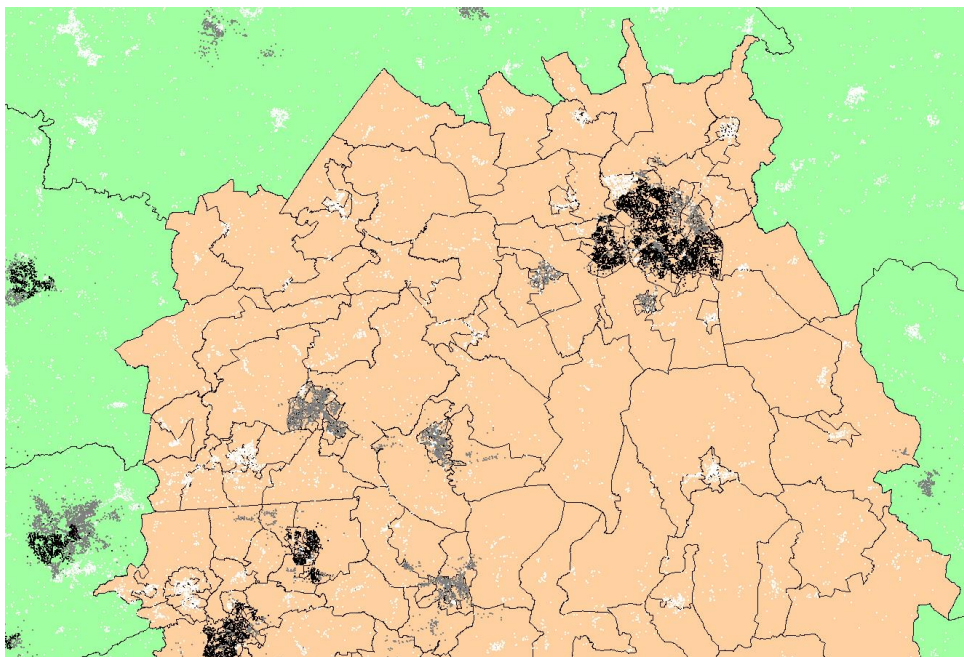
- 7.4 Basic Broadband example: the first chart (Map 1) shows the map of areas modelled to be receiving broadband using current technologies. Each black, grey or white dot is the centre of a postcode; areas with a high density of dots are urban. The large black area is the town of Swindon: premises in most of its postcodes have a choice between ADSL broadband and cable broadband, and so are coloured black, but some areas can only receive ADSL broadband and so are grey. The small white area near the bottom of the map in the centre is the village of Urchfont, which cannot receive cable broadband and most of which is modelled only to be able to receive ADSL broadband at speeds below 2 Mbit/s if at all.

Map 1



- 7.5 Next Generation example: the second chart (Map 2) shows the map of areas modelled to be receiving broadband using next generation technologies. Black areas have high-speed cable broadband and announced VDSL FTTC broadband; grey areas have one but not the other; white areas have neither. Swindon is still visible, but has lower coverage than in the previous map, particularly in the northeast and northwest.

Map 2



8. What information do you need to provide BDUK when applying for State aid approval?

8.1 The basic broadband and NGA maps provided by local bodies should be similar in content, but can be different in format: for example they might indicate areas rather than points. The key information to be provided is that they should indicate clearly the black, grey and white areas and the proposed intervention areas. They should incorporate local information such as wireless and other fibre and cable broadband provision, known basic broadband notspots and slowspots not shown in BDUK's modelling, and any information about suppliers' plans for the next three years obtained during the local body's earlier Open Market Review and Public Consultation.

8.2 The following information should be provided to support your Part 1 Application to use the National Broadband Scheme for the UK:-

- A map of basic broadband infrastructure – both current and planned in the next three years, and a map of NGA broadband infrastructure – both current and planned in the next three years.
- A definition of the two intervention areas: for example lists of postcodes in the intervention areas or if it is easier a list of postcodes not in the intervention areas. Plus estimated numbers of premises in each local authority in total, in the intervention areas and in the black, grey and white mapped areas.
- Draft Speed and Coverage Template

8.3 For the Part 2 Application to use the National Broadband Scheme for the UK, the local body should also supply indicative maps showing the anticipated basic and NGA broadband solutions and coverage as part of their intervention and detail any significant amendments in mapping since the Part 1 Application. The Local Body should also provide the completed Speed and Coverage Template following bid submission