
Digital Switchover (DSO) Programme

Radio DSO Block 5A Oxfordshire

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1 Oxfordshire DSO narrative

The current Oxfordshire local licence is not yet built on Block 5A, in the original licence award three stations were identified and this is represented in the case 1 population and coverage maps.

This multiplex is co-block with Derby and Suffolk neither of which has been built. This multiplex does not suffer from any significant interference from Derby or Suffolk; however Suffolk does degrade the mobile coverage in particular.

The current and proposed block 5A allocations are shown below in figure 1.

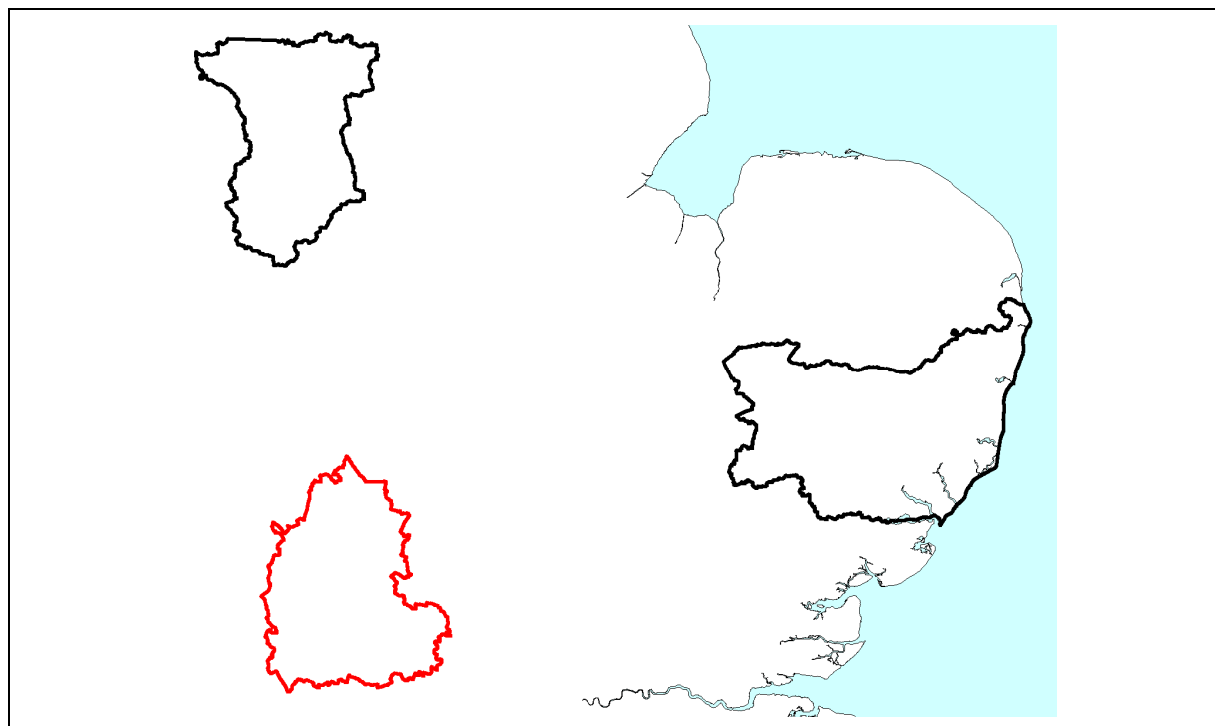


Figure 1.1: 5A block allocations

In planning for each multiplex Ofcom have required coverage assessments:

- For each area four maps should be produced as follows:
 1. **Current Situation** - Map showing current actual coverage (or launch plans where a multiplex has not yet launched), including any transmitters which are required as part of the current licence, but which are not yet operational.
 2. **Modified Network 1** - Map showing the above, plus any improvements to existing infrastructure.
 3. **Modified Network 2** - Map of the above, plus additional smaller infill transmitters focused on areas where FM coverage is robust.
 4. **Modified Network 3** - Map of the above, plus additional transmitters to provide near universal coverage.

For case 1: Current situation

Three sites were identified in the original licence award; Oxford, Boar's Hill and Farthinghoe. Whilst the characteristics are slightly different the same sites are presented. Oxford assumes as dedicated omni-directional antenna at a lower height and Boars Hill uses a screened dipoles system rather than dipoles out the top of the structure, Farthinghoe remains unchanged.

An investigation was carried out to determine if Bretch Hill could be a suitable alternative to Farthinghoe. The result was slightly lower population coverage therefore it was decided to leave case 1 with Farthinghoe included but not Bretch Hill.

For case 2: Modified Network 1

Not applicable.

For case 3: Modified Network 2

To match the BBC Local FM services 10 transmitter sites are required. Note that there is some overlap of coverage into the Swindon multiplex in the Faringdon area given that the coverage (current and planned) on 11C is relatively poor this may prove to be an important overlap.

For case 4: Modified Network 3

In this case it is the same as case 3. No additional transmitters have been planned.

1.1 Outgoing interference and sensitivity to other co-block multiplexes

This multiplex does suffer from some interference from both Derby and Suffolk, but Suffolk is more significant it does reduce the coverage in the western part of the coverage particularly the mobile coverage. Therefore additional sites have been added to improve indoor and mobile coverage and to 'protect' against any incoming interference. In general however this multiplex works well. There is some outgoing interference to the Suffolk and Derby but it is not significant.

2 Coverage of the Multiplex

2.1 Coverage Maps

Coverage maps for the DAB are presented with three colours:

Blue = Mobile coverage (99% locations at 99% time)

Dark Green = Indoor coverage (80-95% locations at 99% time)

Light Green = Robust indoor coverage (>95% locations at 99% time)

Figure 2.1 Case 1 licence plan

Figure 2.2 Case 3 & 4

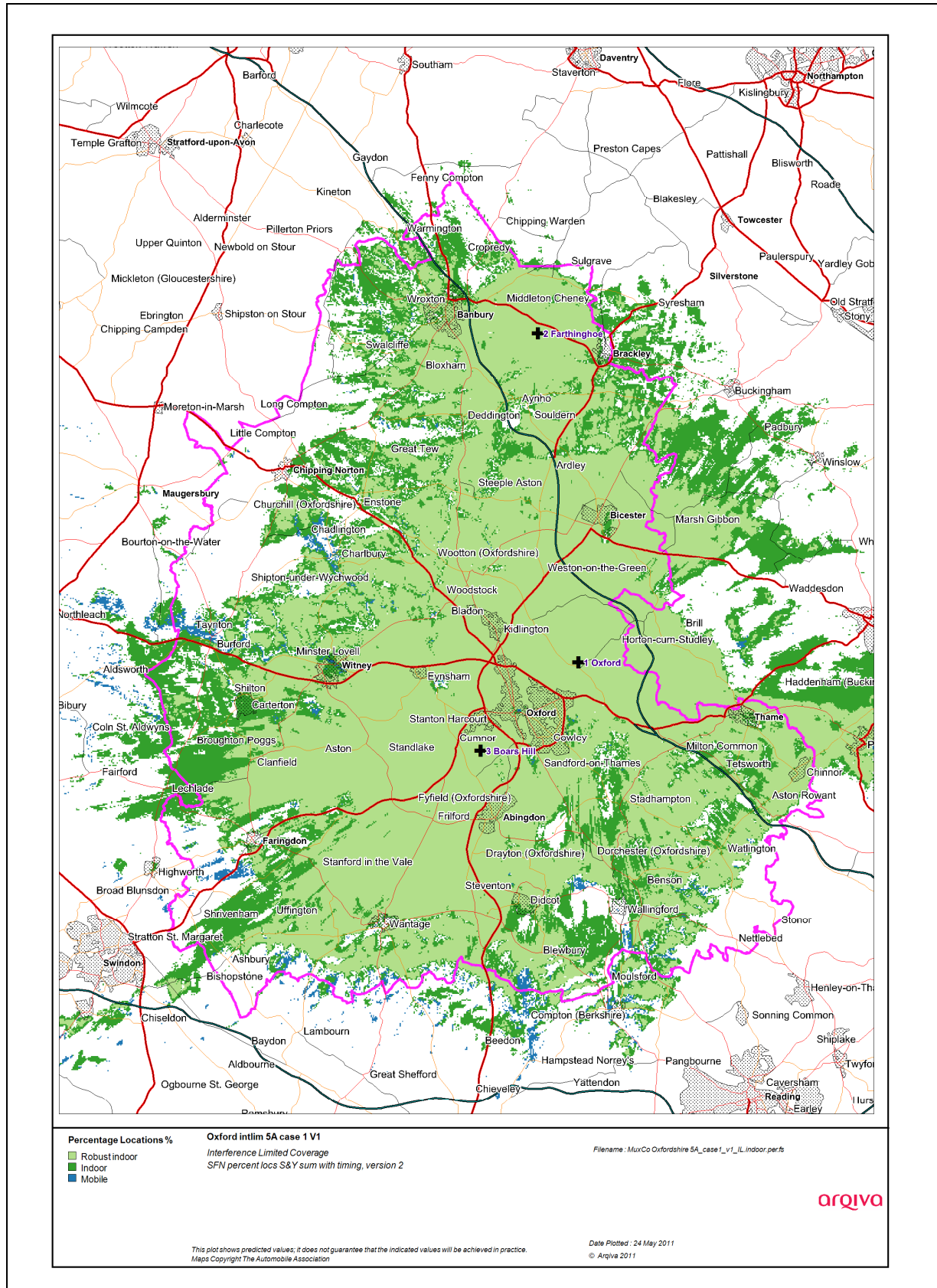


Figure 2.1: Case 1 original licence application (revised editorial area)

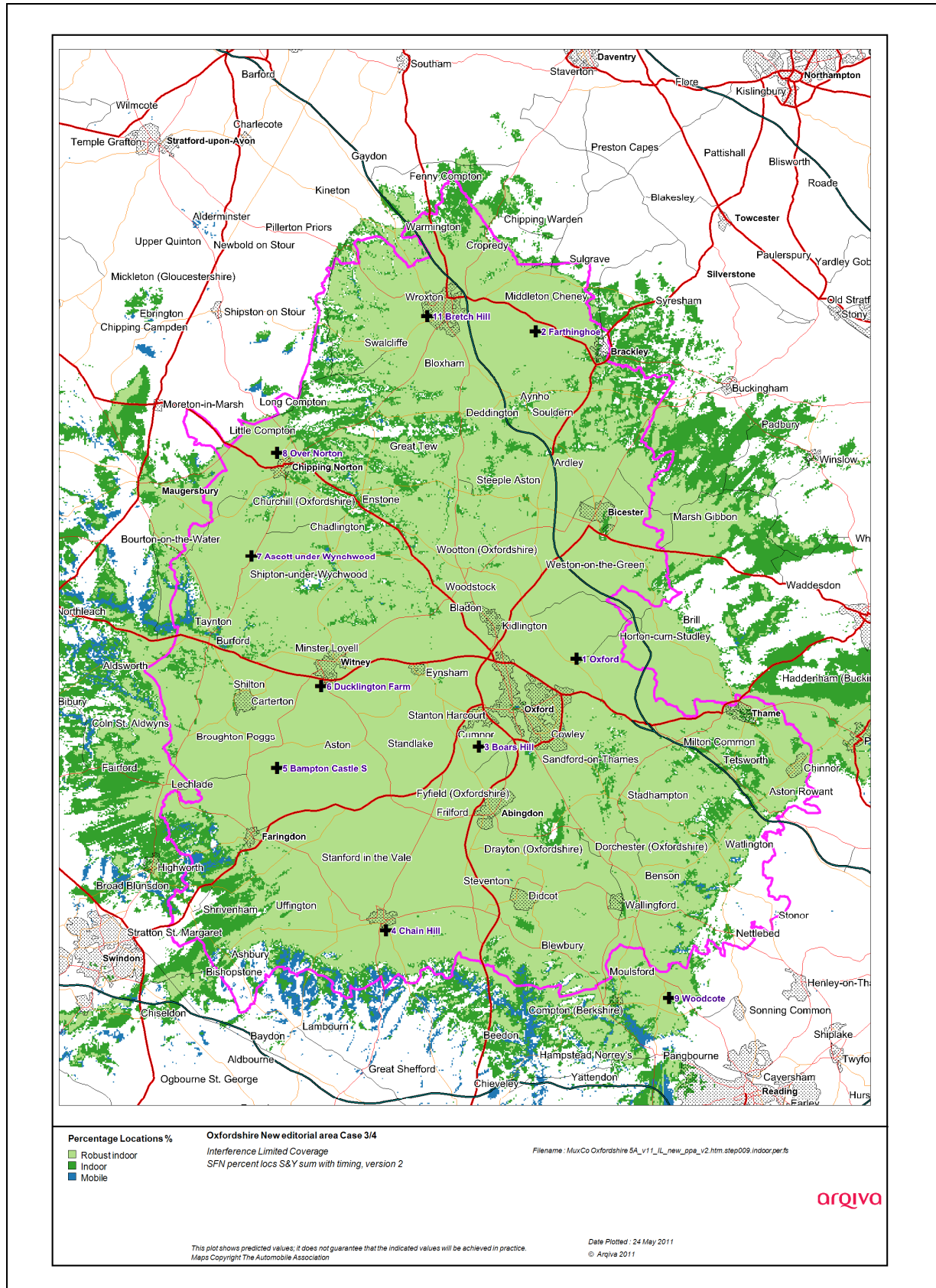


Figure 2.2 Case 3 & 4 final build and robust FM matching (BBC local) revised editorial area

2.2 Population Coverage tables within Editorial Area

Table 2-1. Population coverage proportional indoor 1% time interference

: Total 268938

Site scenario and incremental additional sites	Site Type	Individual Gross Interference Limited coverage within Editorial Area	Number of households within Editorial Area	Increase in number of households	Incremental percentage increase of population	Percentage of Editorial Area
Oxford	Existing site new antenna		154536			57.46
Farthinghoe	New Site	31960 (11.88%)	193529	38993	14.50	71.96
Boars Hill	New Site	99014 (36.82%)	235787	42258	15.71	87.67
Woodcote	New Site	12540 (4.66%)	243512	7725	2.87	90.55
Ducklington Farm	New Site	13213 (4.91%)	245894	2383	0.89	91.43
Over Norton	New Site	3982 (1.48%)	251885	5991	2.23	93.66
Ascott under Wynchwood	New Site	3666 (1.36%)	255448	3563	1.32	94.98
Chain Hill	New Site	9814 (3.65%)	258290	2842	1.06	96.04
Bampton Castle S	New Site	10932 (4.06%)	259486	1196	0.44	96.49
Bretch Hill	New Site	26960 (10.02%)	262454	2968	1.10	97.59

Case 1	-	Yellow =	Original licence application
Case 2	-	Purple + Yellow =	Modified Network 1 (N/A)
Case 3	-	Purple + Yellow + Orange =	Modified Network 2
Case 4	-	Purple + Yellow + Orange + green =	Modified network 3 (same as case 3)

Table 2-2. Road coverage 99% location 99%T: Total roads 697.3 km

Site scenario and incremental additional sites	Site Type	Total road length in km	Increase in number of road length in km	Incremental percentage increase of road length	Percentage of roads within the editorial area
Oxford	Existing site new antenna	308.6			44.26
Farthinghoe	New Site	386.1	77.5	11.11	55.37
Boars Hill	New Site	518.6	132.5	19.00	74.37
Woodcote	New Site	545.0	26.5	3.79	78.16
Ducklington Farm	New Site	551.6	6.5	0.94	79.10
Over Norton	New Site	573.0	21.4	3.06	82.17
Ascott under Wynchwood	New Site	592.3	19.3	2.77	84.94
Chain Hill	New Site	601.3	9.1	1.30	86.24
Bampton Castle S	New Site	611.3	10.0	1.43	87.67
Bretch Hill	New Site	640.5	29.2	4.19	91.86

Case 1	-	Yellow =	Original licence application
Case 2	-	Purple + Yellow=	Modified Network 1 (N/A)
Case 3	-	Purple + Yellow +Orange=	Modified Network 2
Case 4	-	Purple + Yellow +Orange + green =	Modified network 3 (same as case 3)

Table 2-3. Summary of Coverage within Editorial Area for each case

Case	Indoor Households & (percentage coverage) <i>proportional 99% Time Interference Protection</i>	Mobile Coverage km & percentage coverage) <i>99% Locations & 99% Time Interference Protection</i>
1	235787 (87.67%)	518.6 (74.37%)
2		
3	262454 (97.59%)	620.9 (91.86%)
4	262454 (97.59%)	620.9 (91.86%)

Case 1	-	Yellow =	Original licence application
Case 2	-	Purple + Yellow=	Modified Network 1 (N/A)
Case 3	-	Purple + Yellow +Orange=	Modified Network 2
Case 4	-	Purple + Yellow +Orange + green =	Modified network 3 (same as case 3)