
Digital Switchover (DSO) Programme

Radio DSO Block 10B London

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Company Confidential

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Table of Contents

1	London DSO narrative	4
1.1	Outgoing interference and sensitivity to other co-block multiplexes	8
2	Coverage of the Multiplex	8
2.1	Coverage Maps	8
2.2	Population Coverage tables within Editorial Area.....	13

1 London DSO narrative

The current London local licence which transmits on Block 11B and consists of 11 transmission sites of one of which is a low power filler station. It is proposed in the new Ofcom block allocation plan to re-channel to 10B.

The current block 11B allocations are shown below in figure 1.1 and the proposed 10B allocations in figure 1.2

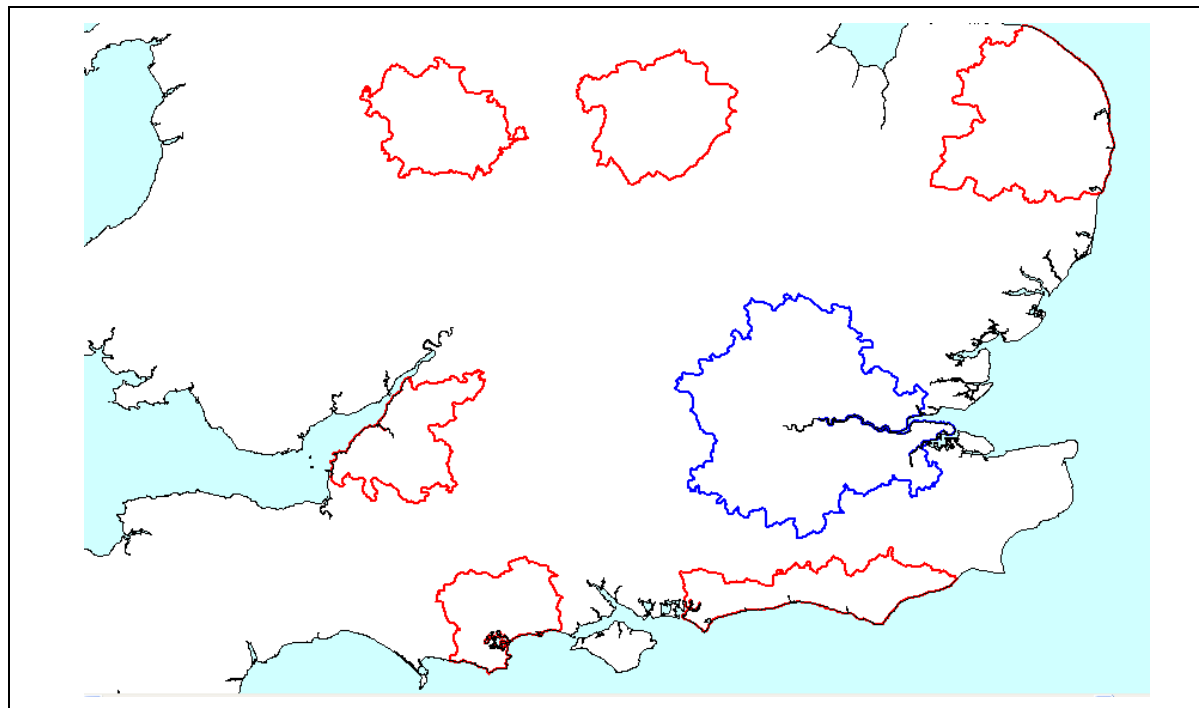


Figure 1.1: Current 11B block allocations

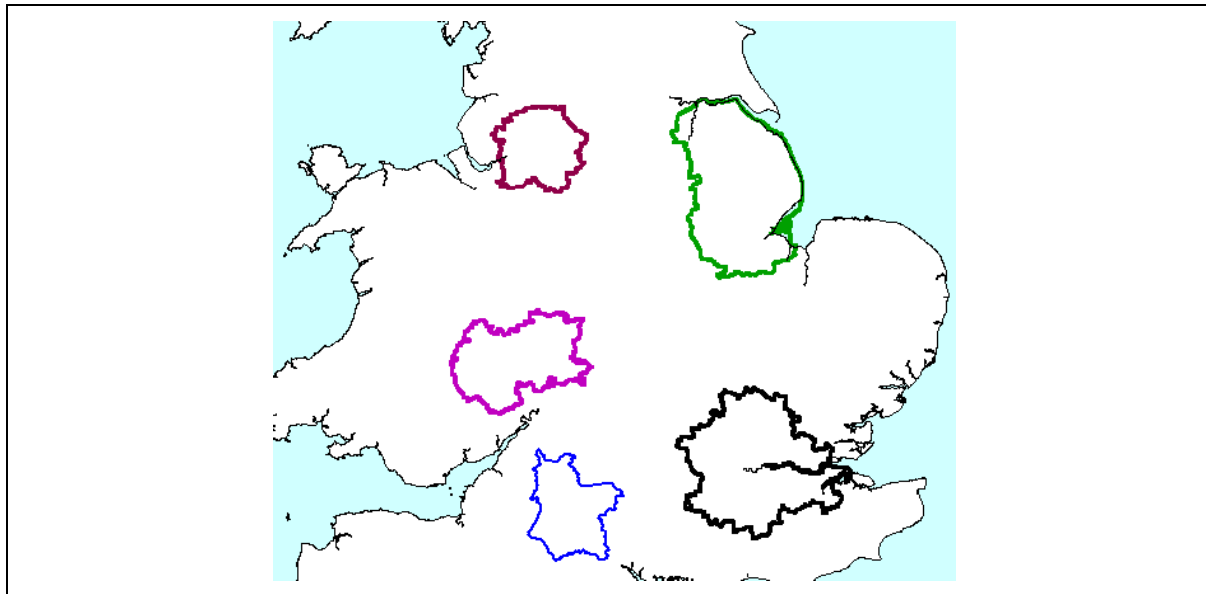


Figure 1.2: Proposed Block 10B allocations

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 mux hasn't 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

It can be seen from figure 1.1 that the current block (11B) has a high re-use with some blocks being very close geographically. The current infrastructure for the London multiplex reflects this situation. The current coverage includes Wrotham and the move from Four Ashes to Chepping Wycombe. This block does suffer interference from a number of multiplexes notably Sussex coast and Norfolk. The coverage for the current situation is given in figure 2.1

For case 2: Modified network 1

This includes a number of power increases at existing sites, plus a modification to the Reigate antenna system. The coverage is shown in figure 2.2

For case 3: Modified network 2

Six smaller sites have been added to provide additional infill coverage focused on areas where Capital FM reception is robust. This is shown in figure 2.3. It should be noted that there are a number of existing DAB sites with coverage exceeding that of robust Capital FM, notably Zouches Farm, Hemel Hempstead, Bluebell Hill and Reigate.

For case 4: Modified network 3

For this case it was required to 'fill' the multiplex to achieve near universal coverage (within practical planning limits). This is shown in figure 2.4. This would require a total of 25 sites.

Some additional notes:

There are large editorial overlaps with this multiplex and many of the stations used to 'fill' the multiplex could be used for other adjacent multiplexes. In some case there are a few sites where the transmitter location is outside the editorial area for this multiplex.

The coverage of this multiplex is interference limited by both Lincolnshire and West Wiltshire. The west Wiltshire multiplex has been tailored to reduce its impact on West London. To the north the dominant source of interference is from Belmont, however much of this interference is outside the editorial area.

1.1 Outgoing interference and sensitivity to other co-block multiplexes

This multiplex has a significant impact on the coverage of the Lincolnshire multiplex and a minor impact on the West Wiltshire multiplex. The coverage impact on the Lincolnshire multiplex is reduced if 5% time interference is used. Many of the sites used to fill the London multiplex in overlap areas are the top interferers to the Lincolnshire multiplex (though NOT exclusively). Re-allocating these ‘interferers’ to different multiplexes would reduce the impact of London on the Lincolnshire multiplex.

2 Coverage of the Multiplex

2.1 Coverage Maps

Coverage maps for 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)

These maps are layered with indoor overlaying outdoor coverage.

Figure 2.1 Current interference limited coverage for London on block 11B

Figure 2.2 Modified network 1

Figure 2.3 Modified network 2

Figure 2.4 Modified network 3

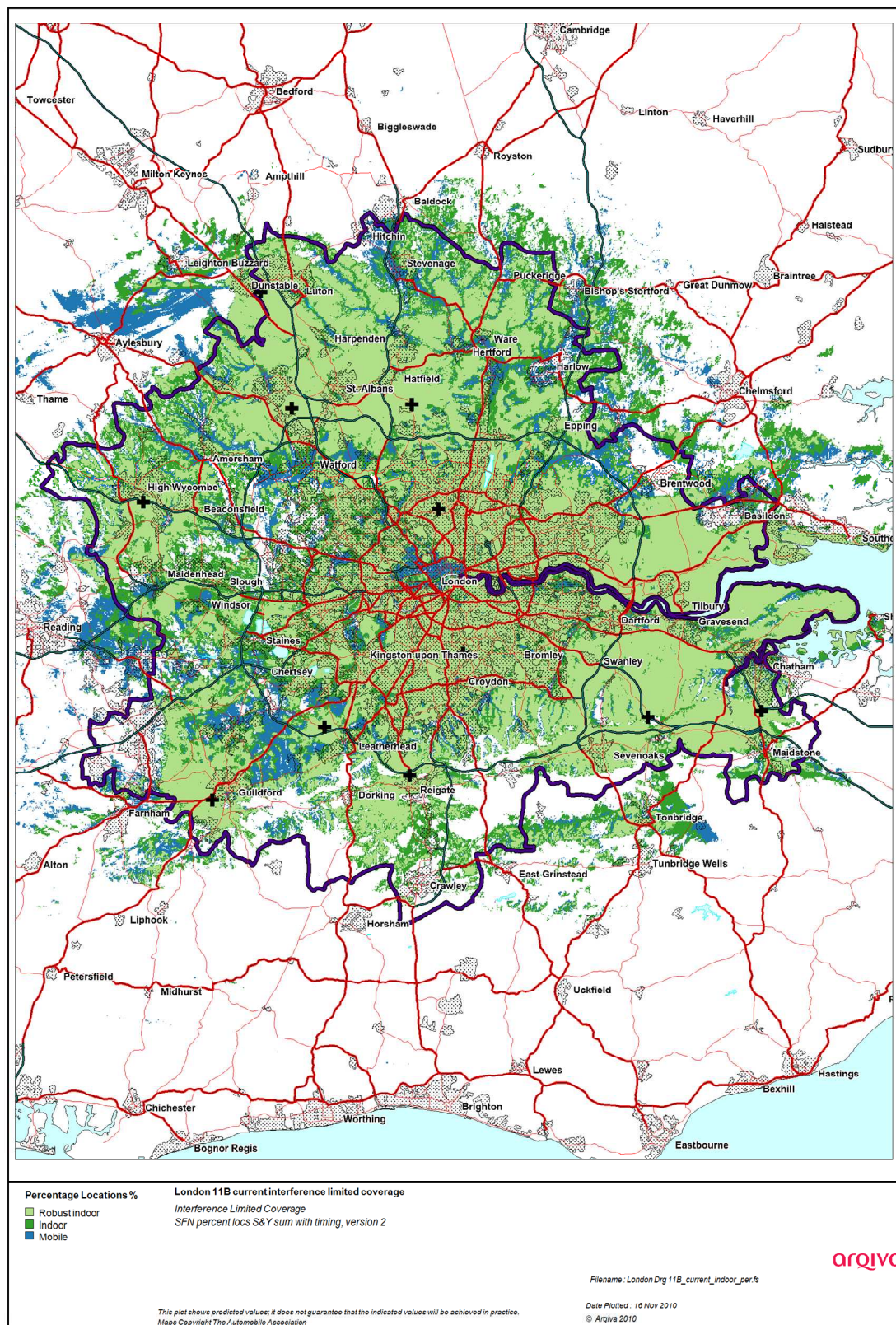


Figure 2-1. Current interference limited coverage for London on Block 11B

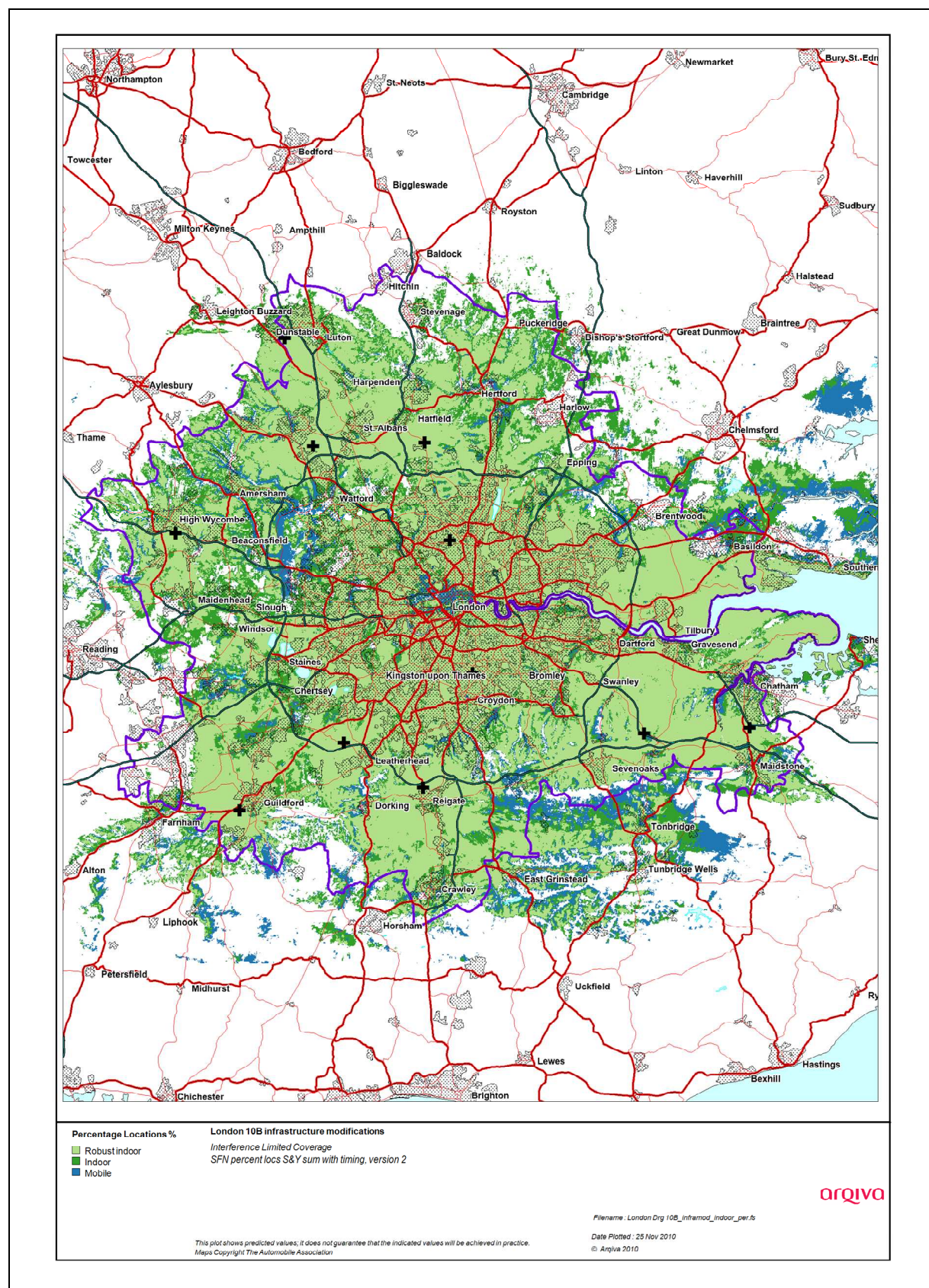


Figure 2-2. Modified network 1

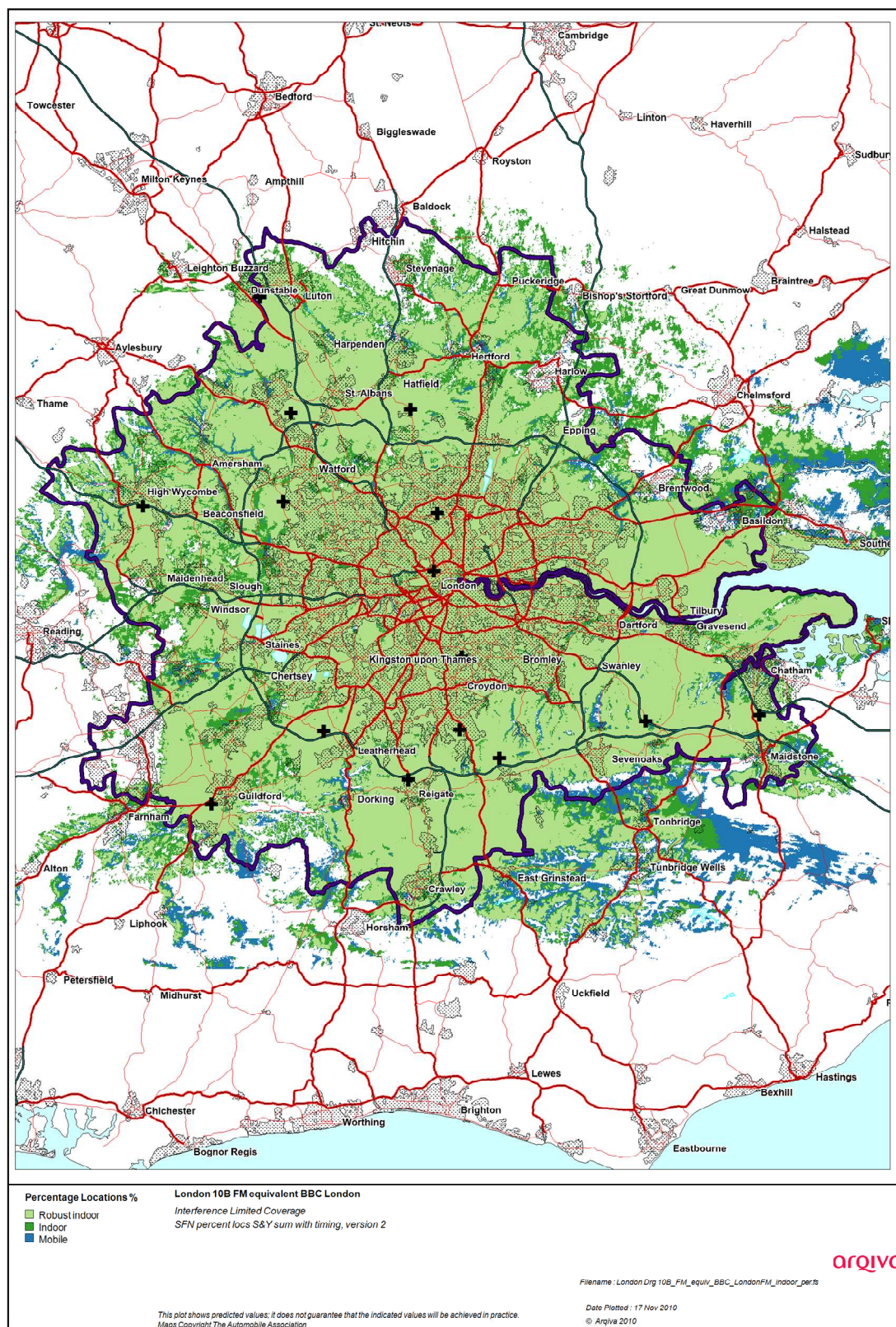


Figure 2-3. Modified network 2

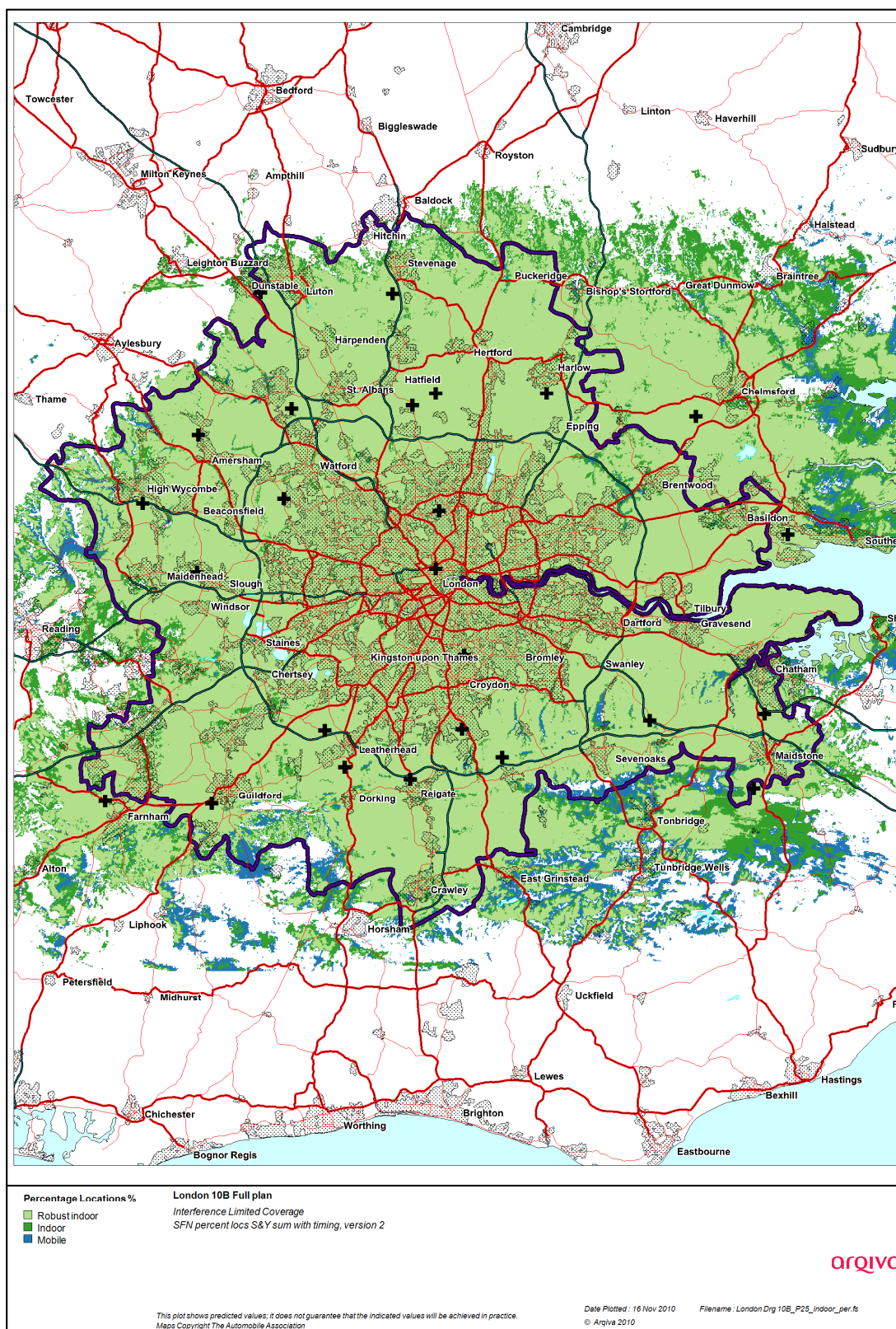


Figure 2-4. Modified network 3

2.2 Population Coverage tables within Editorial Area

Table 2-1. Population coverage proportional indoor: Total households within editorial area is 5,043,439

Site scenario and incremental additional sites	Site type	Individual gross interference limited coverage within Editorial Area	Total number of households within Editorial Area	Incremental increase in number of households	Incremental percentage increase of population	Percentage of Editorial Area
Current (11B)	-	-	4076528	-	-	80.82
Croydon	Existing	1965408	1965408	-	-	38.97
Wrotham	Existing	754,927	2669414	704006	13.96	52.93
BT Tower	New	1,806,815	3428929	759515	15.06	67.99
Slough	New	115,061	3610951	182022	3.6	71.59
Alexandra Palace	Power increase	1,090,995	3813362	202411	4.02	75.61
Mount Vernon	Shared existing infrastructure	88,058	3937265	123903	2.45	78.06
Reigate	Power increase antenna modification	156,833	4103655	166390	3.3	81.36
Zouches Farm	Power increase	73,324	4225655	122000	2.41	83.77
Guildford	Power increase	84,366	4333891	108236	2.16	85.93
Hungry Hill	New	74,926	4427703	93812	1.96	87.89
Chepping Wycombe	Existing	69,965	4493905	66202	1.21	89.1
Bluebell Hill	Power increase	110,058	4595810	101905	2.02	91.12
Benfleet	New	96,681	4649734	53924	1.07	92.19
Epping Green	Shared existing infrastructure	329,256	4814533	164799	3.27	95.46
Hemel Hempstead	Existing	94,221	4835720	21187	0.42	95.88
Woldingham	New	82,254	4862415	26695	0.53	96.41
Kenley	New	143,388	4878152	15737	0.31	96.72
Baker's Wood	Upgraded shared existing infrastructure	15,141	4896720	18568	0.37	97.09
Harlow	New	55,952	4907597	10877	0.21	97.3
Coxheath	New	32,299	4919461	11864	0.24	97.54
Chesham	New	16,138	4929791	10330	0.2	97.74

Site scenario and incremental additional sites	Site type	Individual gross interference limited coverage within Editorial Area	Total number of households within Editorial Area	Incremental increase in number of households	Incremental percentage increase of population	Percentage of Editorial Area
Stoke D-Abernon	Power increase	52,211	4942963	13172	0.26	98.0
Old Knebworth	New	25,520	4952736	9773	0.2	98.2
Mickleham	New	6,985	4956390	3654	0.07	98.27
Brookman's Park	Existing	72,776	4960439	4049	0.08	98.35

- Case 1 Light yellow = existing sites unchanged
- Case 2 - Light yellow +Purple= existing sites unchanged + modified infrastructure = modified network 1
- Case 3 - Light yellow + Dark Blue +Purple + Orange = modified network 2
- Case 4 - Light yellow + Dark Blue + Purple + Orange + Green= modified network 3

Dark Blue is those additional sites required for robust FM within the greater London boundary

Table 2-2. Road coverage 99% locations 99% time: Total roads 4284.4km

Site scenario and incremental additional sites	Site type	Total road length In km	Increase in road length in km	Incremental percentage of road length	Percentage of roads within Editorial Area
Current (11B)	-	3680.4			85.9
Croydon	Existing	1153.9			26.93
Wrotham	Existing	1964.5	810.6	18.92	45.85
BT Tower	New	2431.3	466.8	10.9	56.75
Slough	New	2661.3	230	5.36	62.11
Alexandra Palace	Existing power increase	2855.6	194.3	4.54	66.65
Mount Vernon	Shared existing infrastructure	3000.0	144.4	3.37	70.02
Reigate	Power increase antenna modification	3273.6	273.6	6.39	76.41
Zouches Farm	Power increase	3391.0	117.4	2.74	79.15
Guildford	Power increase	3549.9	158.9	3.71	82.86
Hungry Hill	New	3656.4	106.5	2.48	85.34
Chepping Wycombe	Existing	3732.6	76.2	1.78	87.12
Bluebell Hill	Power increase	3828.9	96.3	2.25	89.37
Benfleet	New	3862.1	33.2	0.77	90.14
Epping Green	Shared existing infrastructure	4041.5	179.4	4.19	94.33
Hemel Hempstead	Existing	4060.9	19.4	0.45	94.78
Woldingham	New	4078.4	17.5	0.41	95.19
Kenley	New	4085.6	7.2	0.17	95.36
Baker's Wood	Upgraded shared existing infrastructure	4107.4	21.8	0.51	95.87
Harlow	New	4121.2	13.8	0.32	96.19
Coxheath	New	4130.2	9	0.21	96.4
Chesham	New	4139.4	9.2	0.22	96.62
Stoke D-Abernon	Power increase	4160.7	21.3	0.49	97.11
Old Knebworth	New	4181.7	21	0.49	97.6
Mickleham	New	4184.8	3.1	0.08	97.68
Brookman's Park	Existing	4190.5	5.7	0.13	97.81

Case 1		Light yellow	= existing sites unchanged
Case 2	-	Light yellow +Purple	= existing sites unchanged + modified infrastructure = modified network 1
Case 3	-	Light yellow + Dark Blue +Purple + Orange	= modified network 2
Case 4	-	Light yellow + Dark Blue + Purple + Orange + Green	= modified network 3

Dark Blue is those additional sites required for robust FM within the greater London boundary.

Table 2-3. Summary of coverage within editorial area

Case	Indoor (households)	Indoor (percentage of Editorial Area)	Mobile (in km within Editorial Area)	Mobile (percentage of roads within Editorial Area)
1	4,076,528	80.82	3680.4	85.9
2	4,310,174	85.5	3746.3	87.4
3	4,691,469	93.0	3996.4	93.3
3 Greater London Boundary	4,891,770	98.55	1802.7	99.58
4	4,960,439	98.35	4190.5	97.81

- Case 1 Light yellow = existing sites unchanged
- Case 2 - Light yellow +Purple= existing sites unchanged + modified infrastructure = modified network 1
- Case 3 - Light yellow + Dark Blue +Purple + Orange = modified network 2
- Case 4 - Light yellow + Dark Blue + Purple + Orange + Green= modified network 3

Dark Blue is those additional sites required for robust FM within the greater London boundary.