
Digital Switchover (DSO) Programme

Radio DSO Block 10C Northamptonshire

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Document Details

General Detail					
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Ver	Date	Amendment
1.0	12/02/11	Draft version for review.
1.1		Initial release
2.0	14/02/11	Road miles in km now corrected (was 10x); Block map should be PDF-able
3.0	2/06/11	Editorial Area Change - resultant change to Maps, Population Tables & Text

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1 Northampton DSO Narrative

Block 10C for Northampton is an existing allocation which has not been implemented. The transmission characteristics of the three stations previously allocated to Northampton multiplex are shown below :-

Name	ERP kW	Antenna	Antenna Height mAGL
Geddington	5.0	Dipole	47.0
Northampton	5.0	Dipole	40.0
Daventry	5.0	Dipole	95.0

Although these proposed transmitters remain in the new plan, the characteristics have changed in particular the ERP's are reduced in order that the Northampton multiplex may co-exist with the other co-block 10C Allocations. Although DAB services already exist at Daventry, a separate antenna will be required in order to minimise outgoing interference to Gloucester (10C) similarly the BBC National antenna at Geddington is not ideal within the context of the Local Northampton multiplex so a separate antenna has been specified.

The editorial area of Coventry (10C) together with it's adjacent editorial area multiplexes are shown, *Figure 1.1* overleaf. There are only two small overlaps, both with Coventry (12D), in relatively small rural areas - south and east of Rugby

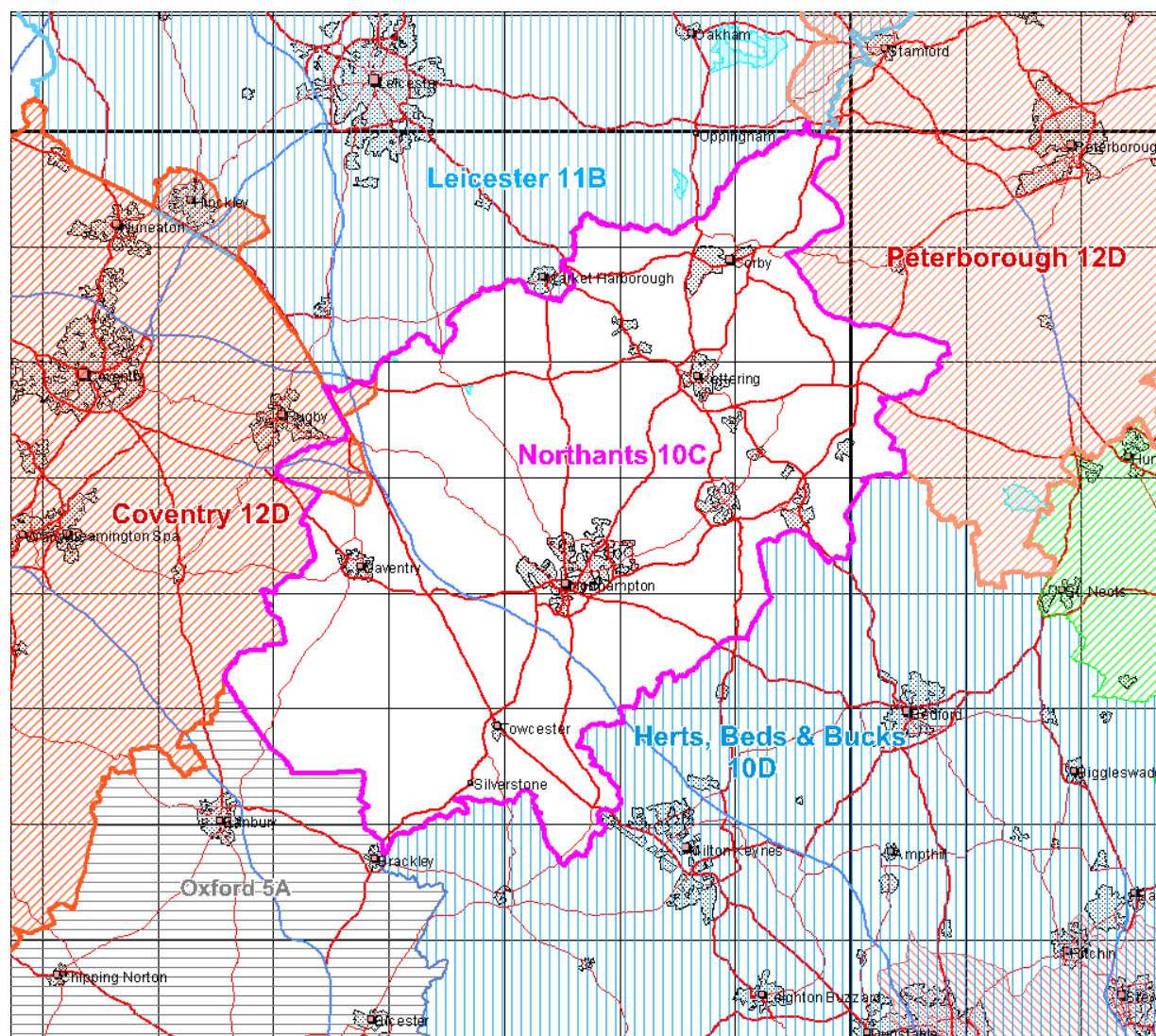


Figure 1.1 – Northampton (10C) Editorial Area with Adjacent Areas

The proposed Block 10C allocations including Liverpool (10C), North Yorkshire (10C), North Devon (10C), Gloucester (10C), Surrey (10C) and Northampton (10C) are shown Fig 1.2. This also gives an idea of the terrain in the Northampton multiplex editorial area in relation to the other co-block allocations.

The co-block Gloucester (10C) multiplex to the east is the closest, being just 25km at its closest point so there are particular difficulties serving the rural area in the south west corner of the editorial area, although this area is relatively sparsely populated.

FM Radio coverage is provided by BBC Northampton (from Northampton transmitter & Geddington) and Heart Home Counties (from Northampton transmitter & Bow Brickhill – outside the Northampton (10C) editorial area).

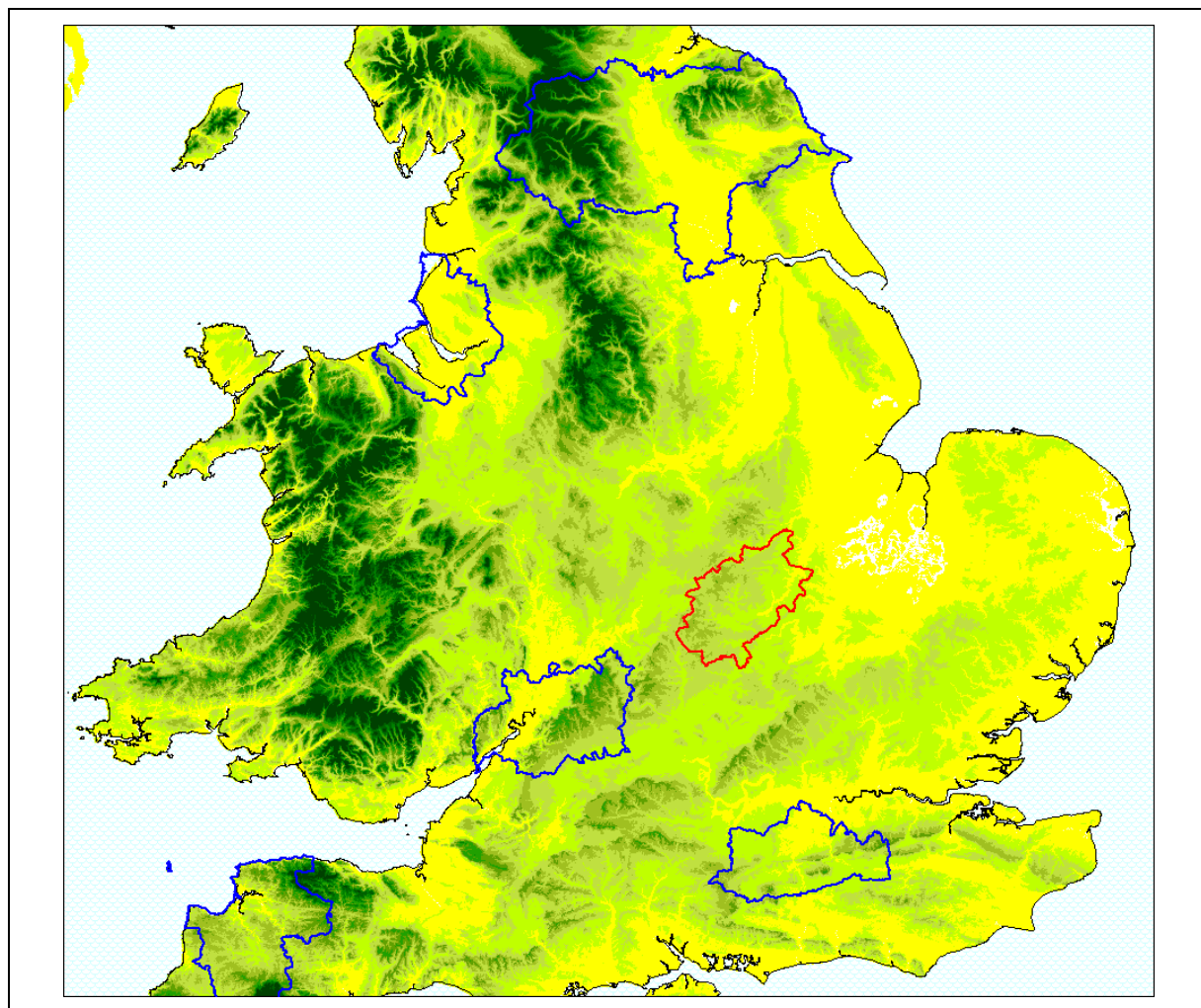


Figure 1.2: Proposed Block 10C allocations

In planning for each multiplex Ofcom have required coverage assessments:

- For each area four sets of maps should be produced as follows:
 1. **Current Situation** - Map showing current actual coverage (or launch plans where a multiplex 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

Not applicable

For case 2: Modified network 1

Consists of the three transmitters proposed in the original allocation, but characteristics have been changed in order to co-exist with other co-block 10C allocation proposals. *Figure 2-1* shows the indoor/outdoor coverage using 1% time interference and *Figure 2-2* shows Outdoor Only 1% time coverage.

For case 3: Modified Network 2

In this it was required to cover areas where existing local FM provision (BBC Northampton and Independent Heart Home Counties) is robust. This is already achieved in implementing Case 2 Modified Network 2 above.

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). To achieve this coverage a further 2 sites will be required, bringing the total number to 5 sites. This is shown in *Figure 2-3* (Indoor/Outdoor, 1% time interference) & *Figure 2-4* (Outdoor Only 1% time interference).

1.1 Incoming interference and sensitivity to other co-block multiplexes

With five Transmitters, outdoor road coverage remains below 90% with just 83.84% coverage (1% Time interference). Indoor Coverage (1% Time interference) is 93.38% of population within the Editorial Area.

Transmitters within the North Yorkshire (10C) multiplex affect the northern and north-western areas of the editorial area, roughly in a line from Rugby to Stamford and also to the east of Corby, along the editorial area boundary. Transmitters within the Surrey 10C multiplex also affect the north-eastern area, to the east of Corby; additionally it affects the south western corner of the editorial area. Gloucester (10C) also affects this area.

1.2 Outgoing interference to other co-block multiplexes

There is an impact to other co-block allocations from the proposals contained in this report, primarily to Gloucester 10C (where the proximity of Editorial Areas are only about 25km distant), but also to Surrey 10C and to a lesser extent to North Yorkshire 10C

2 Coverage of the Multiplex

2.1 Coverage Maps

Coverage maps for the DAB are generally presented with three colours unless otherwise stated:

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* Modified Network 1 & 2
Figure 2-2 Modified Network 1 & 2 – Outdoor Only 1% Time Interference
Figure 2-3 Modified Network 3
Figure 2-4 Modified Network 3 -- Outdoor Only 1% Time Interference
Figure 2-5 Map showing Editorial Area with Terrain

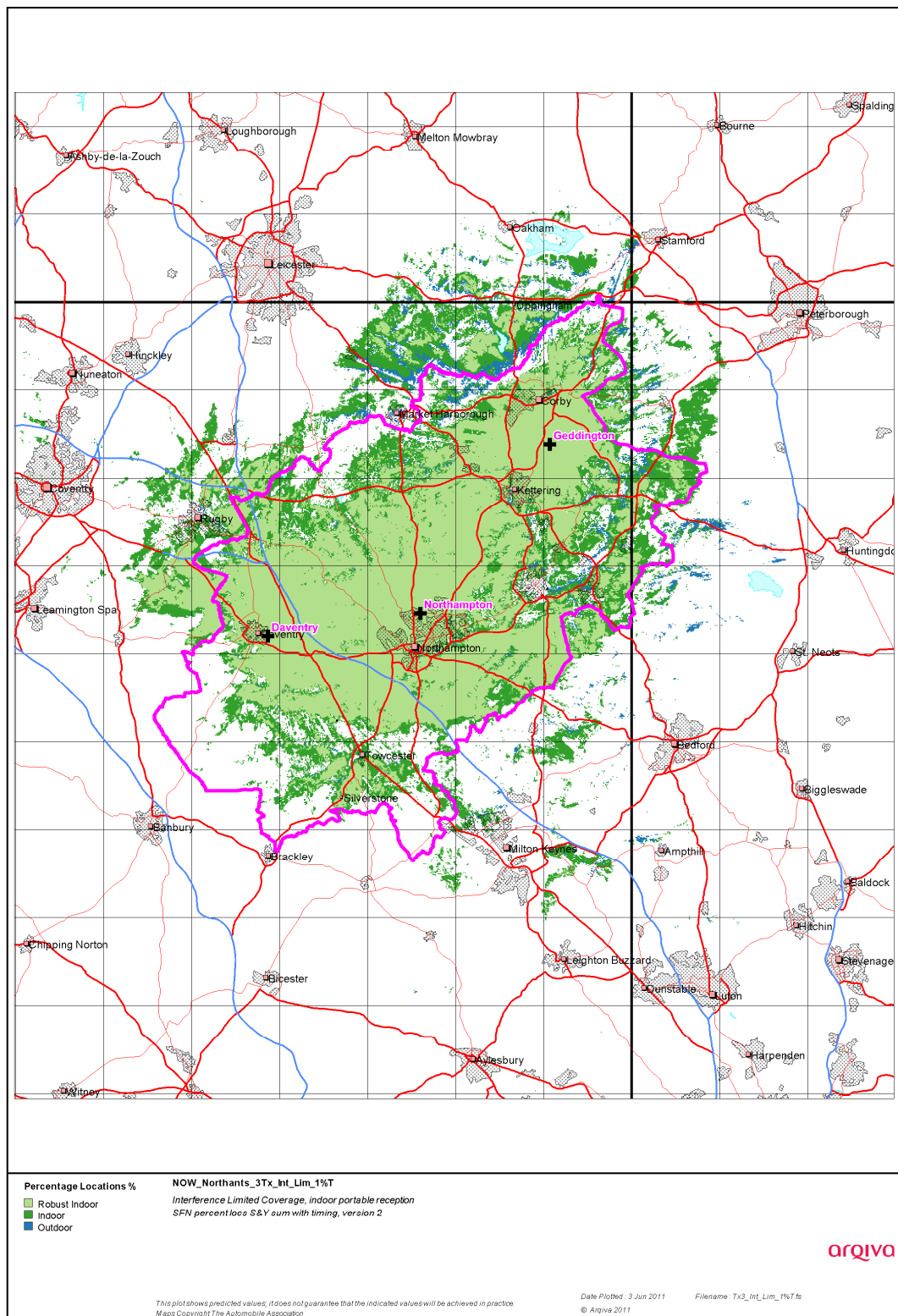


Figure 2-1. Modified Network 1 & 2

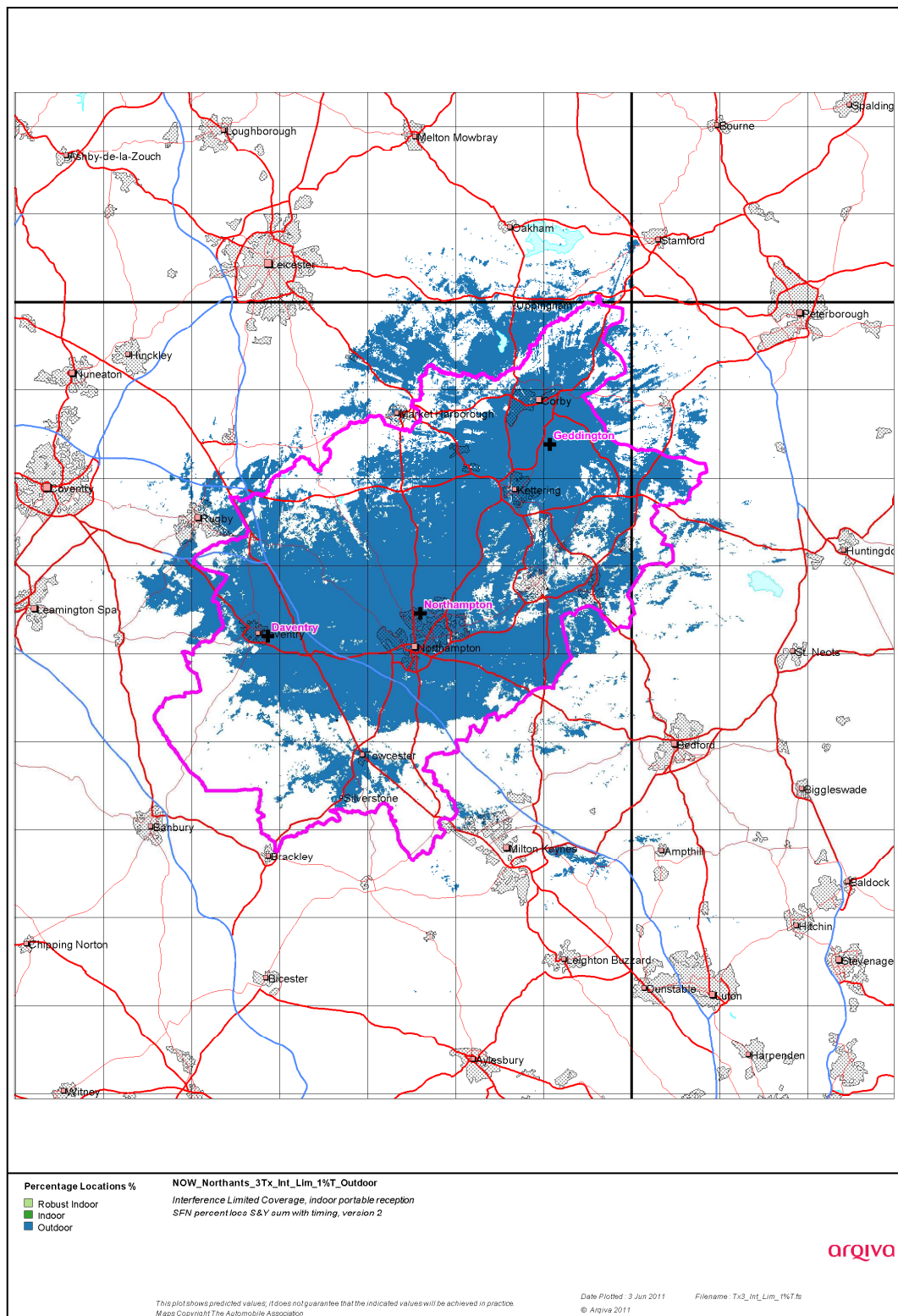


Figure 2-2. Modified Network 1 & 2- Outdoor Only 1% Time Interference

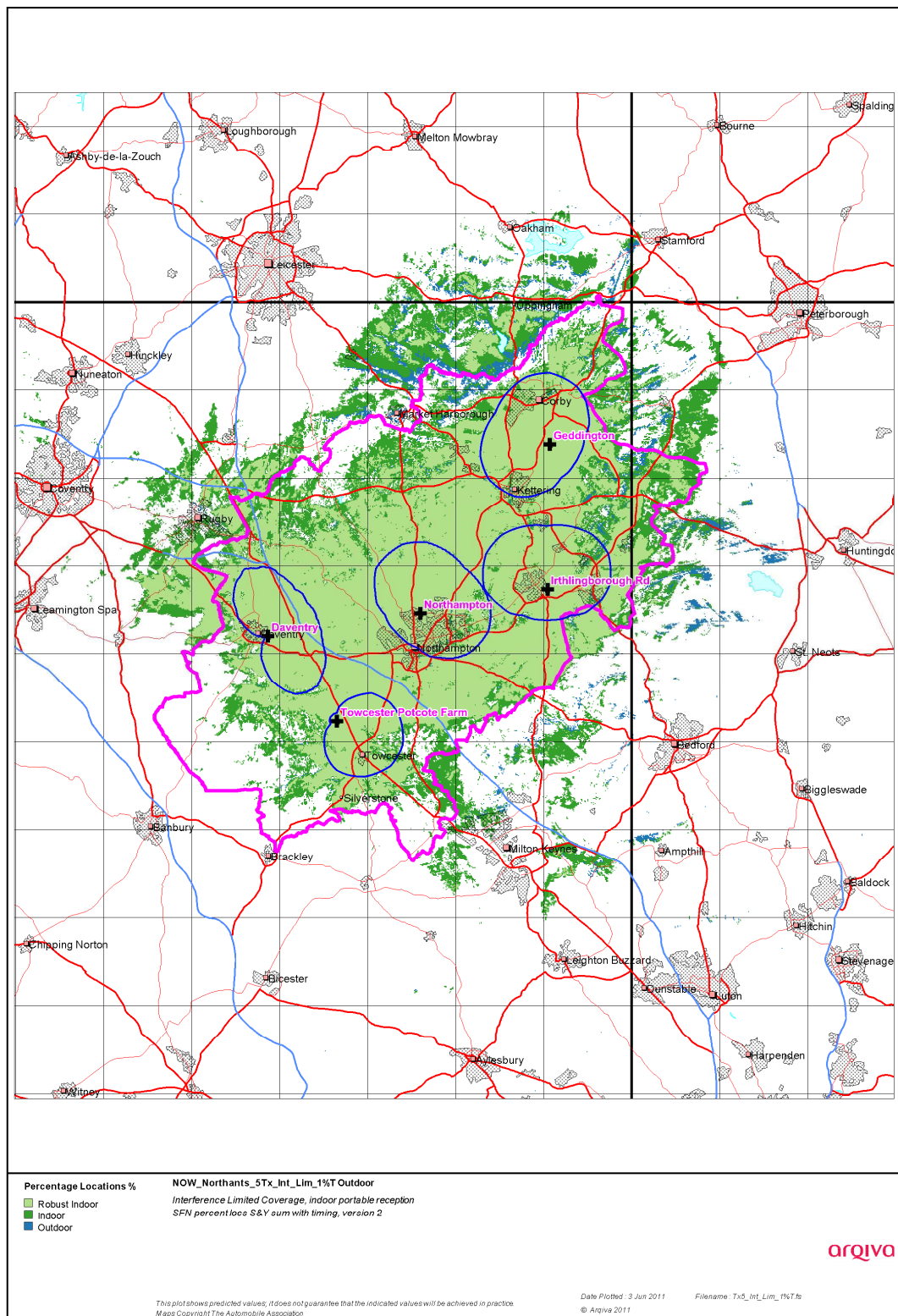


Figure 2-3. Modified Network 3 – 1% Time Interference

(Also shows proposed Antenna HRP's)

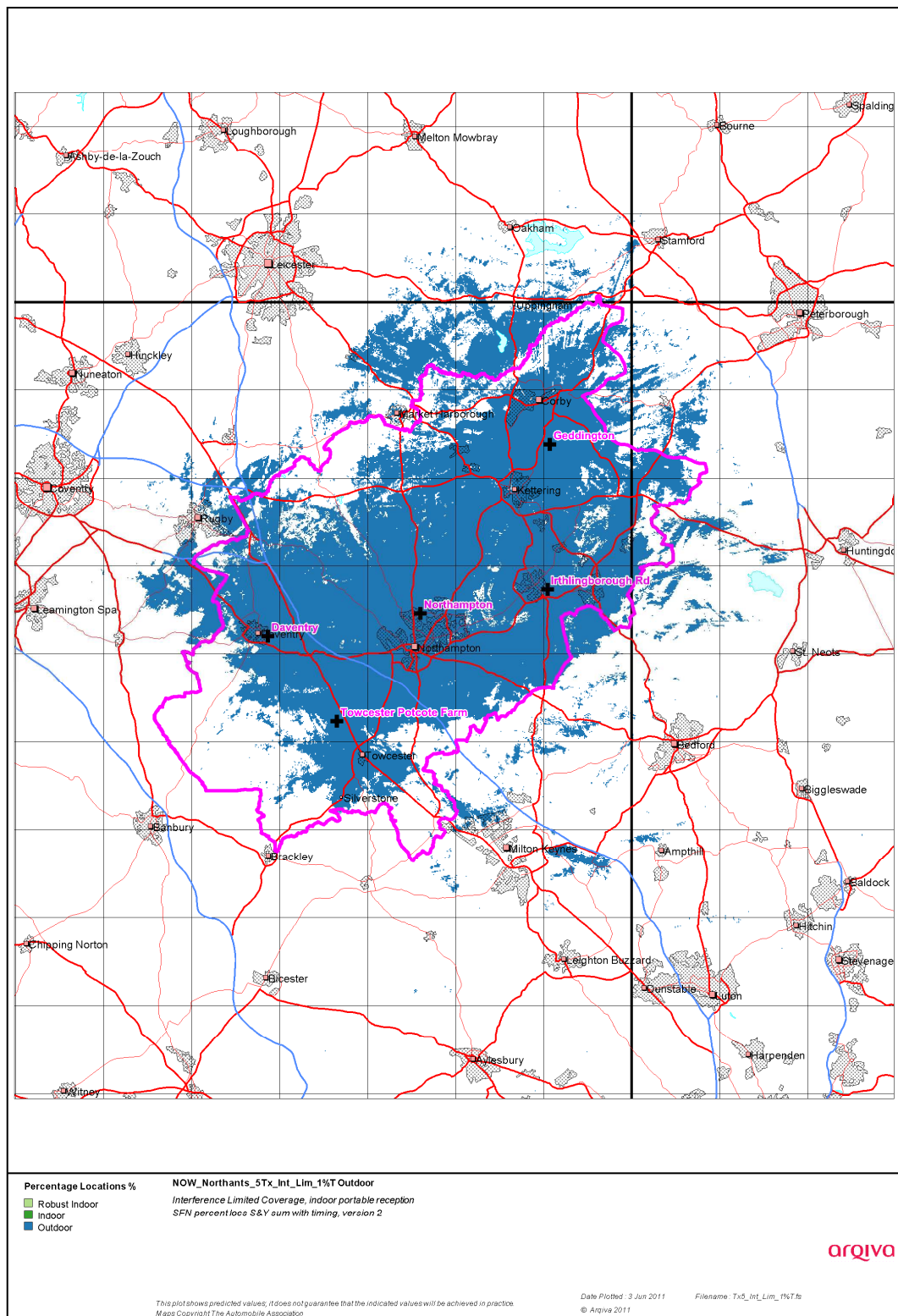


Figure 2-4. Modified Network 3 – Outdoor Only 1% Time Interference

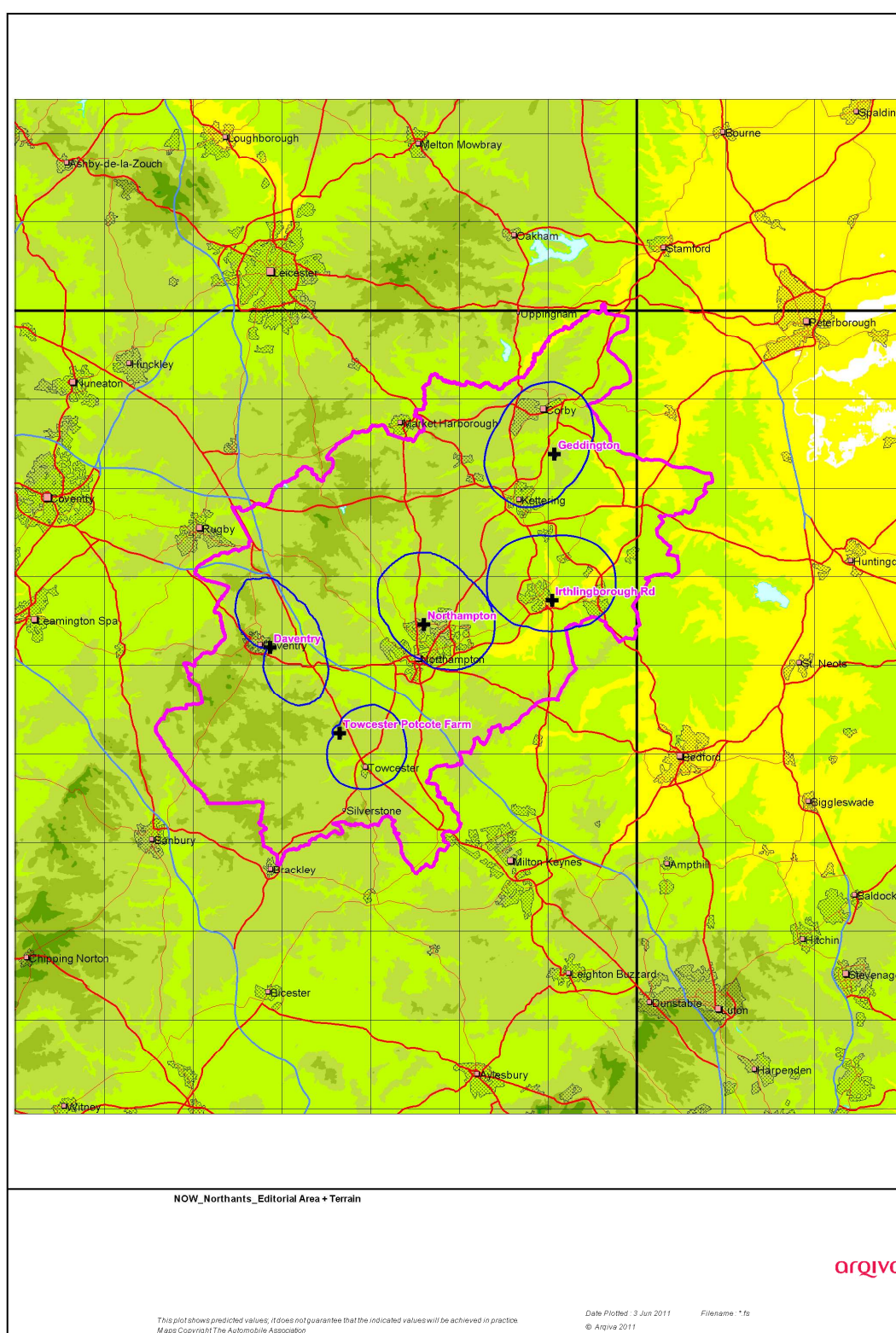


Figure 2-5. Editorial Area with Terrain

(Also shows proposed Antenna HRP's)

2.2 Population Coverage tables within Editorial Area

Table 2-1 Population coverage proportional indoor: Total 282,428 households

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 (%)
Northampton	New	101,614 (35.98%)	101,614	101,674	35.98	35.98
Geddington	New - Existing Infrastructure	64,967 (23.00%)	188,718	87,104	30.84	66.82
Daventry	New - Existing Infrastructure	74,354 (26.33%)	235,409	46,691	16.53	83.35
Irthlingborough	New	40,941 (14.50%)	260,263	24,854	8.80	92.15
Towcester Potcote Fm	New	6,027 (2.13%)	263,739	3,476	1.23	93.38

Case 1		Light yellow	Existing Network – Not Applicable
Case 2	-	Purple	Modified Network 1
Case 3	-	Purple + Blue	Modified Network 2 – As Case 2
Case 4	-	Purple + Blue + Green	Modified Network 3

Table 2-2. Road coverage 99% Locations and 99% Time: Total roads 667.3 km

Site Scenario and Incremental Additional Sites	Site Type	Total Road Length (km)	Increase in Road Length (km)	Incremental Percentage of Road Length (%)	Percentage of Roads within Editorial Area (%)
Northampton	New	146.8	146.8	22.0	22.0
Geddington	New - Existing Infrastructure	338.0	191.2	28.7	50.7
Daventry	New - Existing Infrastructure	509.9	171.9	25.7	76.4
Irthlingborough	New	545.0	35.1	5.3	81.7
Towcester Potcote Fm	New	559.5	14.5	2.1	83.8

Case 1		Light yellow	Existing Network – Not Applicable
Case 2	-	Purple	Modified Network 1
Case 3	-	Purple + Blue	Modified Network 2 – As Case 2
Case 4	-	Purple + Blue + Green	Modified Network 3

Table 2-4. 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	n/a	n/a
2	235,409 (83.35%)	509.9 (76.4%)
3	235,409 (83.35%)	509.9 (76.4%)
4	263,739 (93.38%)	559.5 (83.8%)