
Digital Switchover (DSO) Programme

Radio DSO Block 11B Cornwall

Document Reference: Radio DSO Block 11B Cornwall–1.0.

Release Date: 16 Mar 2011

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1 Cornwall DSO narrative

The current allocation on 11B for Cornwall has been implemented with two transmitters.

The proposed block 11B allocations are shown below figure 1.1 below and include Perth & Dundee, Cumbria, Teesside, Bradford & Huddersfield, Wolverhampton & Shropshire, Leicestershire, Norfolk, Bristol & Bath, Bournemouth and Sussex.

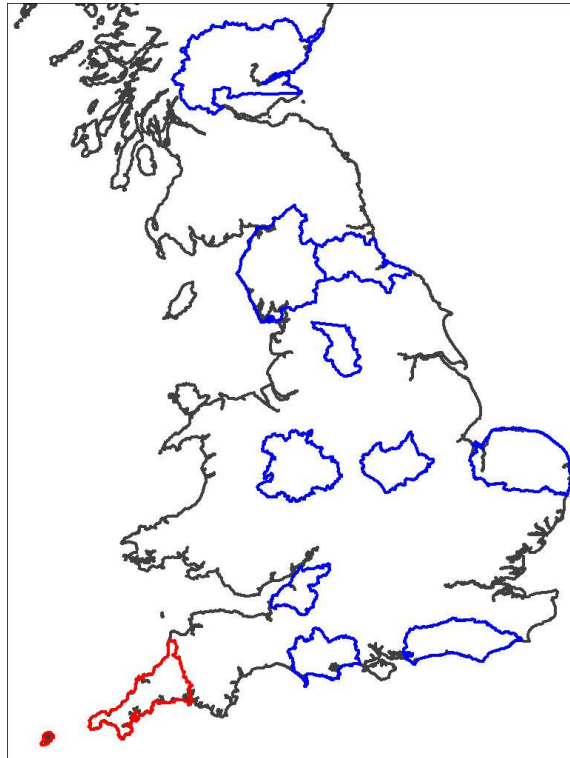


Figure 1.1: Proposed Block 11B allocations

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

The current allocated transmission characteristics are:

Site name	ERP	Site height m a.o.d.	Antenna height a.g.l	Antenna type
Redruth	1.5kW	229	138.5	Panels
Caradon Hill	1.6kW	369	203	Panels

The coverage for the launch situation is shown in figure 2.1.

For case 2: Modified Network 1

It is not possible to increase the power of the existing transmitters.

For case 3: Modified Network 2

In this it was required to cover those areas currently served robustly by local FM services (BBC Local and Independent Pirate FM). To achieve this thirteen additional sites are required. The coverage of the Modified Network 2 is shown in figure 2.2.

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 an additional two sites (a total of 17) will be required. This is shown in figure 2.3.

1.1 Outgoing interference and sensitivity to other co-block multiplexes

There is some impact on the Bournemouth, Wolverhampton and Bristol & Bath multiplexes from the DSO proposal contained within this document.

Cornwall is slightly affected by co-block interference from the Bournemouth, Wolverhampton and Bristol & Bath multiplexes.

Due to the size of the area there are likely to be timing issue across the Cornwall network. There is some evidence of this in that road coverage in Case 3 is slightly better than Case 4 despite there being two transmitters fewer in Case 3. It is proposed to review the timing of this multiplex at later date.

There is an overlap between this multiplex and the editorial area of the Plymouth multiplex.

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 Current Situation

Figure 2-2 Modified Network 2

Figure 2-3 Modified Network 3

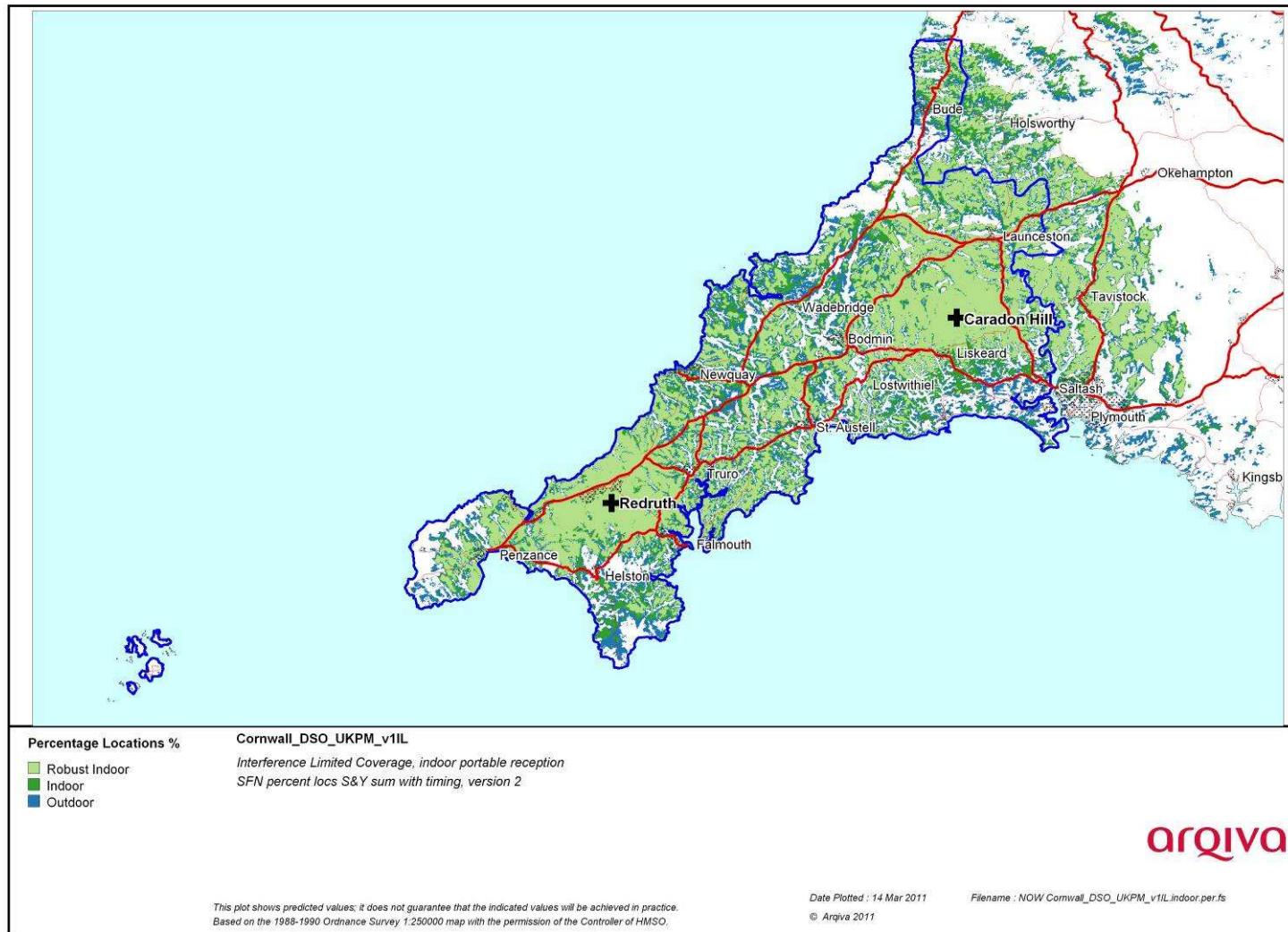


Figure 2-1. Current Situation

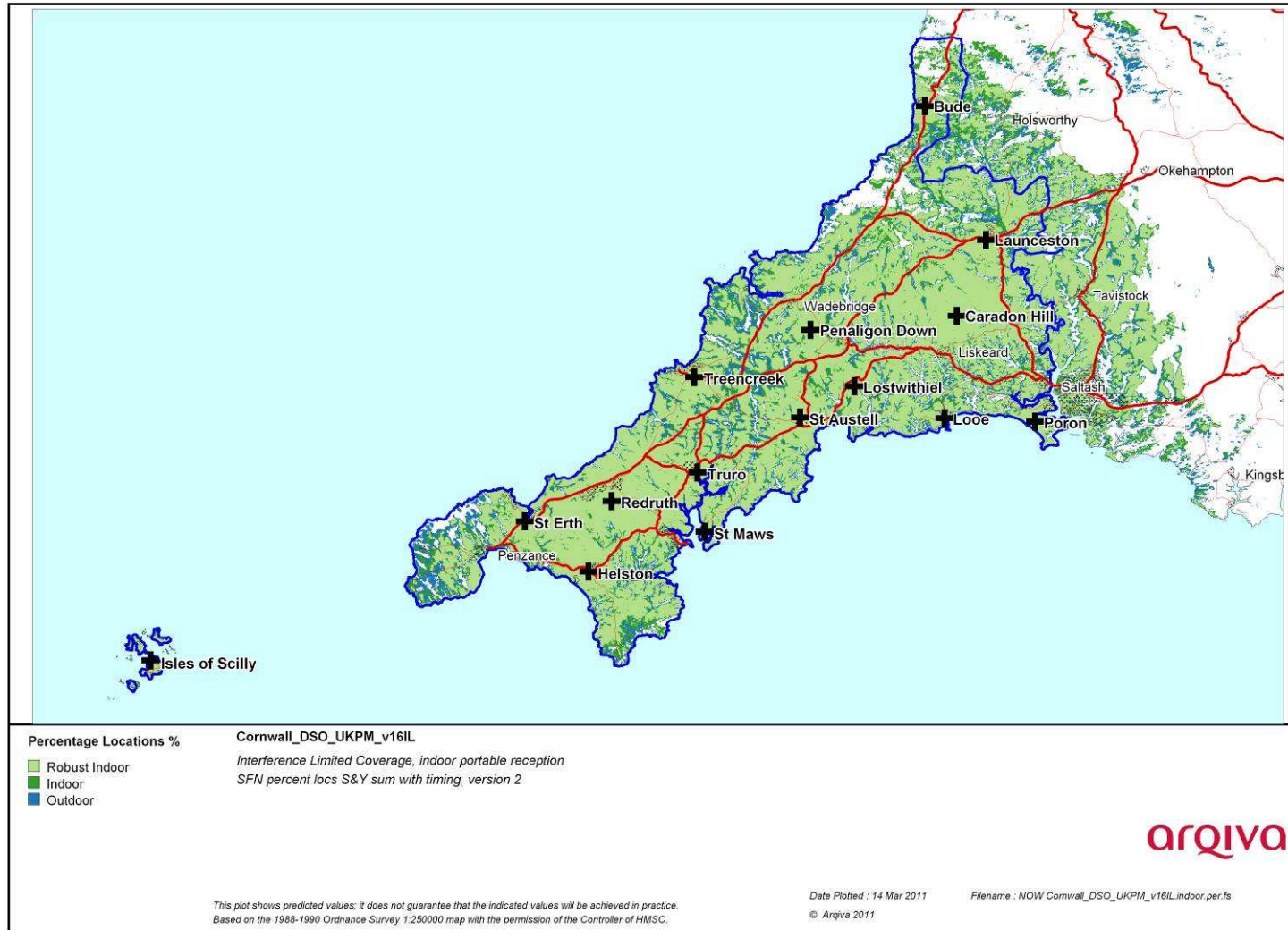


Figure 2-2 Modified Network 2

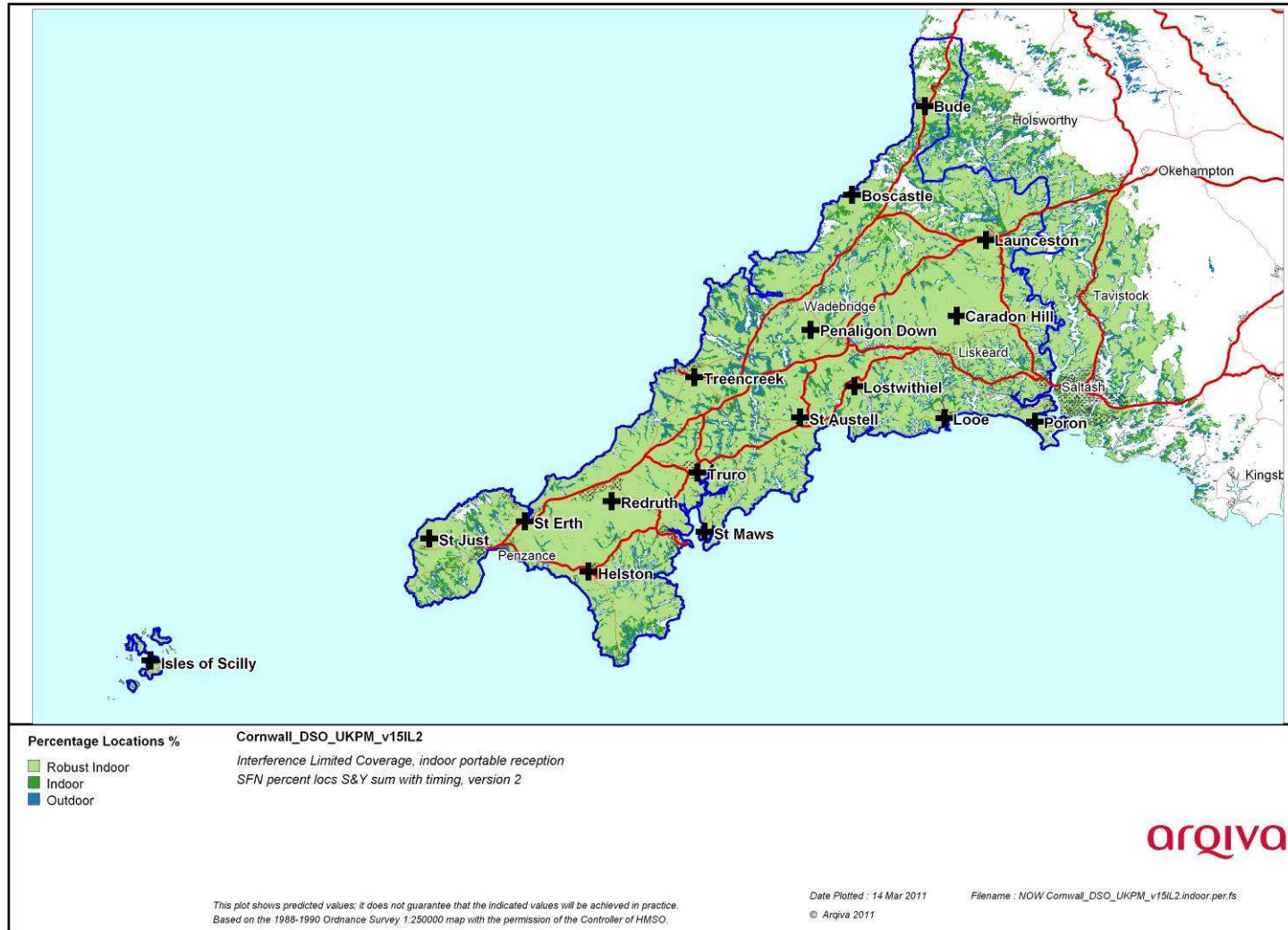


Figure 2-3 Modified Network 3

2.2 Population Coverage tables within Editorial Area

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

: Total 248,643

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 (2 tx)	Shared Existing Infrastructure	-	126,161	-	-	50.7%
Redruth	Current	79,763 (32.1%)				
Caradon Hill	Current	36,219 (14.6%)				
St Austell	Shared Existing Infrastructure	19,184(7.7%)	143,137	16,976	6.8%	57.6%
Poron	New site	16,135 (6.5%)	156,845	13,708	5.5%	63.1%
Penaligon Down	Existing site new antenna	15,039 (6.1%)	168,022	11,177	4.5%	67.6%
St Maws	New Site	18,795 (7.6%)	179,084	11,062	4.4%	72.0%
Helston	Shared Existing Infrastructure	11,013 (4.4%)	188,930	9,846	4.0%	76.0%
Treencreek	New Site	12,581 (5.1%)	195,634	6,704	2.7%	78.7%
Truro	Existing site new antenna	16,524 (6.7%)	201,314	5,680	2.3%	81.0%
St Just	Existing site new antenna	3,943 (1.6%)	206,713	5,399	2.2%	83.1%
Bude	New Site	5,529 (2.2%)	210,950	4,237	1.7%	84.8%
Launceston	New Site	5,531 (2.2%)	213,495	2,545	1.0%	85.9%
St Erth	New Site	5,827 (2.3%)	215,487	1,992	0.8%	86.7%
Boscastle	Existing site new antenna	1,457 (0.6%)	217,431	1,944	0.8%	87.5%
Looe	Existing site new antenna	3,496 (1.4%)	219,313	1,882	0.7%	88.2%
Lostwithiel	Existing site new antenna	1,797 (0.7%)	220,931	1,618	0.6%	88.9%
Isles of Scilly	Existing site new antenna	1,708 (0.7%)	222,169	1,238	0.5%	89.4%

Case 1	-	Yellow =	Current or planned coverage
Case 2	-	Not Applicable	Modified Network 1
Case 3	-	Yellow +Orange=	Modified Network 2
Case 4	-	Yellow + Orange + Green=	Modified network 3

Table 2-2. Road coverage 99% location 99%T: Total roads 706 km

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 (2 tx)	Shared Existing Infrastructure	537	-	-	76.0%
St Austell	Shared Existing Infrastructure	539	2	0.3%	76.3%
Poron	New site	564	25	3.5%	79.8%
Penaligon Down	Existing site new antenna	583	19	2.7%	82.5%
St Maws	New Site	594	11	1.6%	84.1%
Helston	Shared Existing Infrastructure	616	22	3.1%	87.2%
Treencreek	New Site	626	10	1.4%	88.6%
Truro	Existing site new antenna	631	5	0.7%	89.3%
St Just	Existing site new antenna	632	1	0.1%	89.4%
Bude	New Site	634	3	0.4%	89.8%
Launceston	New Site	644	10	1.4%	91.2%
St Erth	New Site	645	0	0.1%	91.3%
Boscastle	Existing site new antenna	646	1	0.2%	91.5%
Looe	Existing site new antenna	652	5	0.8%	92.2%
Lostwithiel	Existing site new antenna	654	2	0.3%	92.5%
Isles of Scilly	Existing site new antenna	661	7	1.0%	93.6%

Case 1	-	Yellow =	Current or planned coverage
Case 2	-	Not Applicable	Modified Network 1
Case 3	-	Yellow +Orange=	Modified Network 2
Case 4	-	Yellow + Orange + Green=	Modified network 3

Table 2-3. Summary of Coverage within Editorial Area for each case
99% time Interference

Case	Indoor Households & (percentage coverage)	Mobile Coverage km & percentage coverage) 99% locations
1	121,161 (50.7%)	537 (76.0%)
2	n/a	n/a
3	215,942 (86.9%)	662 (93.7%)
4	222,169 (89.4%)	661 (93.6%)

Case 1	-	Yellow =	Current or planned coverage
Case 2	-	Not Applicable	Modified Network 1
Case 3	-	Yellow +Orange=	Modified Network 2
Case 4	-	Yellow + Orange + Green=	Modified network 3