



Digital Switchover (DSO) Programme

Radio DSO Block 10D North Wales

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1 North Wales DSO narrative

The current allocation on 10D for North Wales has not been implemented.

The proposed Block 10D allocations are shown below and include Plymouth, Somerset, Herts Beds & Bucks, Humberside, Dumfriesshire and Inverness.

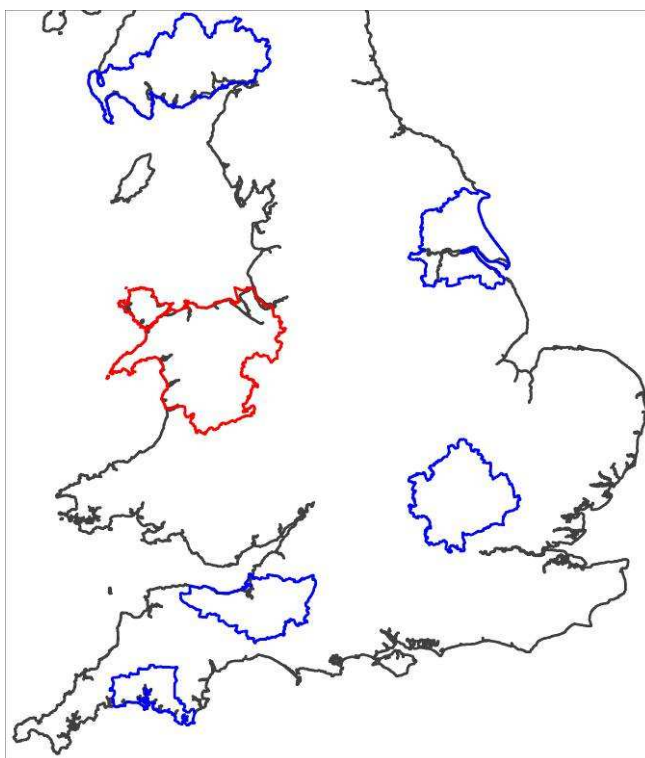


Figure 1.1: Proposed Block 10D allocations

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
Moel-y-Parc	6.3	340	189	Panels
St John's Beacon	2	10	127	Dipoles
Hope Mountain	2.9	315	24	Dipoles
Great Ormes Head	0.7	201	30	Dipoles
Arfon	5	290	240	Yagis

The coverage for the launch situation is shown in figure 2.1

For case 2: Modified Network 1

Not applicable as this network is not yet in service.

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 Heart FM). To achieve this twenty-one additional sites are required. The coverage of the Modified Network 2 is shown in figure 2.2. The south-west corner of the editorial area is served on FM by Blaenplwyf and it is likely that there will be coverage in this area from the Mid and West Wales multiplex.

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). With the addition of coverage from Blaenplwyf, Modified Network 2 achieves this requirement.

1.1 Outgoing interference and sensitivity to other co-block multiplexes

The main impact is on the Dumfriesshire and Humberside multiplexes. There is also a slight impact on the Herts, Beds & Bucks and Somerset multiplexes from the DSO proposal contained within this document. The Plymouth multiplex is unaffected.

The editorial area has changed from that agreed under GE06. The proposed network produces levels at the Irish 10D allotment boundary which are quite high and hence Ofcom will require agreement with Ireland for this network.

North Wales is affected by co-block interference mainly from Dumfriesshire. The Humberside, Somerset and Herts, Beds & Bucks multiplexes also have a small effect.

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

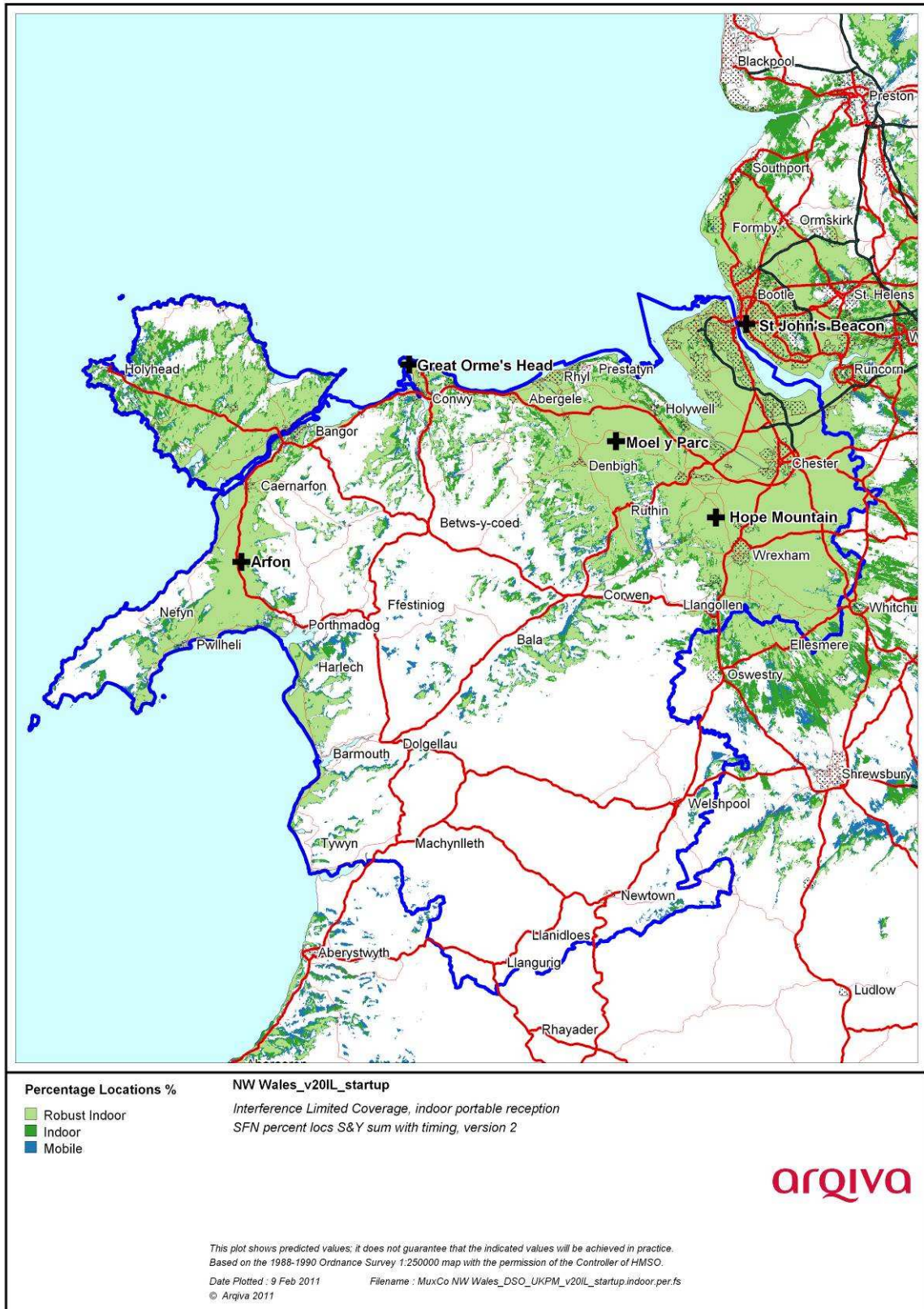


Figure 2.1. Current Situation

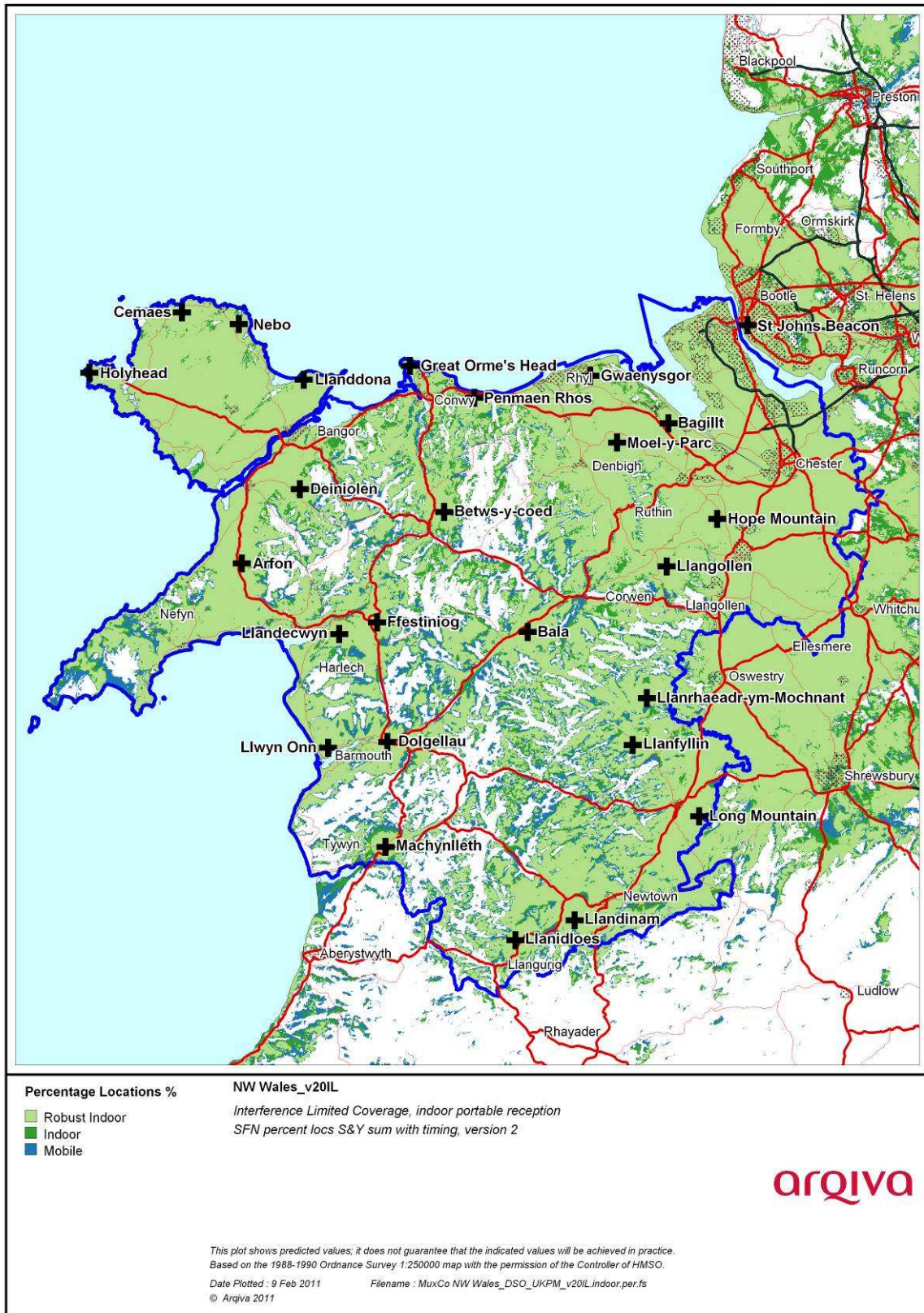


Figure 2.2 Modified Network 2

*Population Coverage tables within Editorial Area**Table 2-1. Population coverage proportional indoor 1% time interference**Total 592,306*

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 (5 tx)	Existing Infrastructure	468,406 (79.1%)	468,406	-	-	79.1%
St John's Beacon	Existing Infrastructure	143,380(24.21%)				
Hope Mountain	Existing Infrastructure	195,952 (33.1%)				
Moel-y-Parc	Existing Infrastructure	253,295 (42.8%)				
Great Ormes Head	Existing Infrastructure	40,308 (6.8%)				
Arfon	Existing Infrastructure	37874 (6.4%)				
Llanddona	Existing Infrastructure	40,306 (6.8%)	484,763	16,357	2.8%	81.8%
Long Mountain	Existing Infrastructure	11,419 (1.9%)	496,964	12,201	2.1%	83.9%
Gwaenysgor	Existing site New Antenna	62,513 (10.6%)	506,163	9,199	1.6%	85.5%
Llandinam	Existing Infrastructure	9,899 (1.7%)	514,456	8,293	1.4%	86.9%
Llandecwyn	Existing Infrastructure	9,538 (1.6%)	521,818	7,362	1.2%	88.1%
Holyhead	Existing Infrastructure	15,669 (2.7%)	528,628	6,810	1.2%	89.3%
Llangollen	Existing site New Antenna	208723 (35.2%)	535,010	6,382	1.1%	90.3%
Betws-y-Coed	Existing site New Antenna	4,526 (0.8%)	538,864	3,854	0.7%	91.0%
Nebo	New Site	4,222 (0.7%)	542,144	3,280	0.5%	91.5%
Penmaen Rhos	Existing site New Antenna	15,928 (2.7%)	544,672	2,528	0.4%	92.0%
Bagillt	Existing site New Antenna	37,495 (6.3%)	547,122	2,450	0.4%	92.4%

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
Dolgellau	Existing site New Antenna	1,978 (0.3%)	549,105	1,983	0.3%	92.7%
Bala	Existing site New Antenna	1,936 (0.3%)	551,091	1,986	0.3%	93.0%
Ffestiniog	Existing site New Antenna	5,063 (0.9%)	553,012	1,921	0.3%	93.4%
Deiniolen	Existing site New Antenna	16,308 (2.8%)	554,767	1,755	0.3%	93.7%
Machynlleth	Existing site New Antenna	1,610 (0.3%)	556,398	1,631	0.3%	93.9%
Llwyn Onn	Existing site New Antenna	2,668 (0.5%)	557,989	1,591	0.3%	94.2%
Llanidloes	Existing site New Antenna	1,767 (0.3%)	559,572	1,583	0.3%	94.5%
Llanfyllin	Existing site New Antenna	1,818 (0.3%)	560,636	1,064	0.2%	94.7%
Llanrhaedrym-Mochnant	Existing site New Antenna	951 (0.2%)	561,513	887	0.1%	94.8%
Cemaes	Existing site New Antenna	1,432 (0.2%)	562,211	698	0.1%	94.9%

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

Table 2-2. Road coverage 99% location 99%T

Total roads 2,046 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 (5 tx)	Existing Infrastructure	1,063	-	-	52.0%
Llanddona	Existing Infrastructure	1,119	56	2.8%	54.7%
Long Mountain	Existing Infrastructure	1,223	104	5.1%	59.8%
Gwaenysgor	Existing site New Antenna	1,244	21	1.0%	60.8%
Llandinam	Existing Infrastructure	1,299	55	2.7%	63.5%
Llandecwyn	Existing Infrastructure	1,366	68	3.3%	66.8%
Holyhead	Existing Infrastructure	1,381	15	0.7%	67.5%
Llangollen	Existing site New Antenna	1,462	81	4.0%	71.5%
Betws-y-Coed	Existing site New Antenna	1,494	32	1.6%	73.0%
Nebo	New Site	1,506	13	0.6%	73.6%
Penmaen Rhos	Existing site New Antenna	1,511	5	0.2%	73.9%
Bagillt	Existing site New Antenna	1,521	10	0.5%	74.4%
Dolgellau	Existing site New Antenna	1,552	31	1.5%	75.9%
Bala	Existing site New Antenna	1,580	27	1.3%	77.2%
Ffestiniog	Existing site New Antenna	1,604	24	1.2%	78.4%
Deiniolen	Existing site New Antenna	1,615	12	0.6%	79.0%
Machynlleth	Existing site New Antenna	1,643	28	1.4%	80.3%

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
Llwyn Onn	Existing site New Antenna	1,664	21	1.0%	81.3%
Llanidloes	Existing site New Antenna	1,669	5	0.2%	81.6%
Llanfyllin	Existing site New Antenna	1,676	7	0.4%	81.9%
Llanrhaedr-ym- Mochnant	Existing site New Antenna	1,676	0	0.0%	81.9%
Cemaes	Existing site New Antenna	1,683	6	0.3%	82.2%

Case 1	-	Yellow =	Current or planned coverage
Case 2	-	Not Applicable	Modified Network 1
Case 3	-	Yellow +Orange=	Modified Network 2
Case 4	-	Not Applicable	Modified network 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	468,406 (79.1%)	1,063 (52.0%)
2	n/a	n/a
3	562,211 (94.9%)	1,683 (82.2%)
4	n/a	n/a

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