



**MuxCo North Yorkshire Limited**

**An application to Ofcom for the  
North Yorkshire local DAB digital radio multiplex**

**Part A – Public Section**

**September 2007**



## Executive summary

Please provide a summary of your application, of no more than four pages in length.

### Our Beliefs

1. Radio is in the second phase of development of DAB. In phase one, the larger heritage operators colonised the DAB landscape, simulcasting popular analogue stations and introducing some new digital only services. In the second phase, smaller and new radio operators have entered the market to create new audio and data services and to drive the industry forward with new ideas and business models.
2. MuxCo North Yorkshire Ltd ('MuxCo Yorks') believes that digital radio broadcasting should be available to as many organisations as possible. In addition, a multiplex should offer a wide range of broadcast options, such as bit rates, hours of broadcast etc, making DAB as economical as possible to service providers, and thereby helping to maximise the take-up of digital radio.
3. We believe that with launch of more national services over the next 12 months, it is financially prudent to encourage a range of local operators to broadcast. Local (and regional) services have the ability to attract a mixture of local and national revenue, giving them multiple opportunities to support their businesses.

### The North Yorkshire Marketplace

4. The first dedicated commercial radio service in North Yorkshire launched in 1992 - Minster FM. Whilst other local services, as well as regional and national radio, have launched over the last 15 years, the current choice of commercial radio in the county remains relatively poor. As a result, the BBC dominates radio listening, with its current 68.1% share significantly higher than its national average of 54.9%.
5. The focus of local commercial radio is on the youth market, to the detriment of older listeners. As a result, a high 46% of commercial radio listening is with those aged under 35s, with the BBC's national and local services dominating older listening.

### MuxCo Yorks' proposals

6. Our proposals are to launch a cost effective multiplex within a prudent timetable and to enable existing and new service providers to broadcast. Our reasonable carriage costs, bitrate management policy and innovative Podcast Service have already attracted new operators to local radio.
7. Local radio has a strong commercial future – there will always be demand for local services that cater for local tastes and interests (both geography and genre focused) from both listeners and advertisers. It is important for multiplex managers to provide opportunities for a wide range of local services, both existing and new, and for local radio operators to have the opportunity to provide these in an efficient and economical way.

8. Capacity has been allocated to accommodate existing analogue services in stereo from launch. Together, these services are listened to by 194,000 adults (36% of the adult population) each week, and represent 16.7% of total radio listening:
  - Minster FM
  - Stray FM
  - Fresh Radio
  - BBC Radio York
  
9. It is proposed that Yorkshire Coast Radio will join the multiplex within 24 months of launch, at the same time as an additional transmitter to cover the Yorkshire Coast. The inclusion of this service will increase reach to 228,000 (42% of the population) and share to 19.9% of all listening.
  
10. Spectrum has also been allocated to provide a range of new digital services that will further broaden listener choice and expand the number of providers in the market. 2 confirmed services are:
  - An easy listening melodic music service - *Easy Radio*
  - A traffic and travel service - *Traffic Radio*
  
11. MuxCo Yorks will also carry a local Podcast Service providing opportunities for niche services catering for a diversity of passions, interests and communities to reach their audiences. Downloadable podcasts will include a news service from ITN ON, a local what's on guide from Itchy, specialist music downloads from Channelfly, Asian programming from Sunrise and Sabras, world music from Passion, as well as a number of local podcasts.
  
12. Capacity has also been allocated for the provision of DLS and EPG at launch, as well as for the development of innovative data services, such as music downloads, traffic and travel services, DABverts and slideshow.

### MuxCo North Yorkshire Ltd

13. The applicant company is MuxCo North Yorkshire Ltd. The shareholders are:
 

• The Local Radio Company plc ('TLRC')	60%
• MuxCo Ltd	40%
  
14. The MuxCo management team has extensive experience as a multiplex operator, having established and operated a multiplex network of 19 local radio multiplexes, as well as having broader strategic experience, and is currently managing UTV's six multiplexes.
  
15. Our proposals are based on a thorough review of the North Yorkshire market and the opportunities it presents. Reflecting the market, we have adopted a prudent launch and multiplex development plan, with additional transmitters and services to launch during the initial years of the licence term. This reflects that despite quite a high level of digital coverage by the national and regional multiplexes, the level of DAB ownership take up to date in this market is lower than has been noted in other local multiplex areas. The older population profile is, we believe, a contributory factor.

## The Award Criteria

16. We believe that MuxCo Yorks is in a strong position to introduce and support DAB digital radio across North Yorkshire for the following reasons:

### *Our proposed coverage*

17. We propose a prudent development plan for the multiplex. We will deliver solid coverage of the major population centres and transport routes, in particular the road network across the county.
18. At launch, 2 transmitters will provide 'outdoor coverage' (e.g. to in-car and mobile receivers) of 61.7% of the adult population, and higher strength 'indoor coverage' (e.g. to kitchen radios) of 48.3%.
19. A third transmitter will be introduced within 24 months of launch, increasing outdoor coverage to 69.5% of the adult population, and indoor coverage to 57.4%.
20. The opportunity to introduce further transmitters in an efficient and cost effective manner will be reviewed during the licence term.

### *Our timetable to achieve coverage and launch of services*

21. It is our intention is to launch the multiplex during the six month period between January and June 2009.
22. The launch of MuxCo Yorks will follow that of 4 Digital and the around the time of the launch of its last service – 'Pure 4', which in itself will generate a considerable level of public interest in digital radio within this area. MuxCo has discussed with 4 Digital how to align itself with the new multiplex's launch marketing.

### *Our ability to establish and maintain the service*

23. TLRC owns and operates a number of well established and popular local radio services across North Yorkshire and is committed to their digital broadcast. MuxCo itself is an ambitious and developing company with substantial digital radio experience and interests in a number of local multiplexes.
24. The integrated relationship that the shareholders will have with the multiplex, in relation to the provision of audio and data services, as well as the development of commercial opportunities, provides further financial comfort (for both sides), and helps demonstrate its ability to establish and maintain the proposed selection of services throughout the licence period. MuxCo's shareholders are also well-resourced companies that can support the multiplex throughout the licence term.
25. The MuxCo management team has considerable experience of local digital radio management.
26. Our chosen transmission provider, National Grid Wireless, has considerable experience in building and operating DAB multiplex networks on time and on budget.

### ***Catering for local tastes and interests***

27. MuxCo Yorks has completed a comprehensive survey of local residents to:
- Analyse existing radio listening habits.
  - Analyse the radio marketplace.
  - Assess local tastes and interests.
28. Our research supports the simulcasting of local analogue services and for new services that will complement existing choice and cater for unserved tastes and interests. Carriage of existing services helps promote digital radio and drive listeners from analogue to digital. New digital services help broaden choice and provide further incentives for consumers to buy a DAB digital radio.

### ***Broaden choice***

29. The North Yorkshire multiplex is overlapped by MXR's Yorkshire multiplex (95% adult PPA). A number of local multiplexes overlap the fringes of the new multiplex area; the largest being EMAP's Humberside multiplex (12% adult PPA). Our proposed services will individually and collectively broaden choice.

### ***Demonstrating local demand and support***

30. RAJAR provides strong evidence of demand and interest in the simulcast services, whilst our specially commissioned consumer research underpins RAJAR, and enables us to measure local demand for our proposed digital only services. Our research demonstrates strong interest in the proposed services, which collectively appeal to 69% of the adult population.

### ***Being fair and effective***

31. We have established fair and transparent policies for negotiations with potential programme and additional service providers, and maintain full records of any contacts and discussions which take place, in whatever form, prior to, during and after the application process.

## Summary

32. We believe that MuxCo North Yorkshire will be the most credible operator for the North Yorkshire multiplex.
- Our comprehensive research has helped ensure that we better understand the needs of local citizens and consumers. This has ensured that we will deliver the services that will truly appeal to the people of North Yorkshire and help commercial radio improve its market share.
  - TLRC has an impressive track record in operating local stations across the area. This management expertise will be invaluable to the multiplex, as well as assisting the development of new programming streams to encourage the broadening of choice.
  - The capacity allocation will bring both new and existing radio operators to Yorkshire's digital radio market. It will also bring niche content from a variety of operators via its innovative podcast channel with capacity available to add new providers during the licence term.
  - The consortium, which is well resourced, in terms of both management and finances, is committed to ensuring that local digital radio is a success in this area.
  - MuxCo Yorks will deliver effective local DAB solutions, benefiting all service providers and ensuring a long-term commitment to DAB digital radio.



## General information

### 1. Name of Applicant, Address, Telephone and Fax Nos., E-mail address

This must be a single legal entity: either a body corporate or a named individual person. If the former, a copy of the certificate of incorporation must be included with the application.

MuxCo North Yorkshire Ltd

Registered Number            6013948  
Address:                         96a Curtain Road, London EC2A 3AA  
Telephone (daytime):        020 7739 7879  
E-mail address:                info@muxco.com

### 2. Main Contact (For Public Purposes)

Please nominate at least one individual to deal with any press or public enquiries, stating:

Name:                            Gregory Watson  
Telephone (daytime):        07917 413700  
Address:                         96a Curtain Road, London EC2A 3AA  
E-mail address:                gregory@muxco.com

### 3. Main Contact (For Ofcom Purposes)

Please nominate one individual to whom questions of clarification and/or amplification should be sent.

As above.

**Section 51(2)(a) and (b): Extent of proposed coverage area and timetable for coverage roll-out**

**4. Summary of coverage proposals**

Provide a summary, fully consistent with the more detailed information about transmission sites supplied separately (see Q.6 below), of the coverage areas proposed to be achieved by the applicant's technical plan, and an estimate of the adult (aged 15+) population which will be served by this local radio multiplex service. For the avoidance of doubt, Ofcom's assessment of coverage, and the concomitant roll-out obligations applied in the licence, will be based solely on the transmission data supplied in response to Q.6 of the application.

- 33. Our transmission proposal has been designed in conjunction with National Grid Wireless ('NGW') to provide optimum population coverage across the licensed area, taking into account urban areas and the main road network. The plan takes into account the footprints of existing and planned local multiplexes, as well as the footprints of the existing analogue services and their spheres of influence. The use of block 10C only is proposed for all transmitters in the network.
- 34. The network has been designed on the basis of the following service levels:
  - 58dBuV/m outdoor mobile.
  - 65dBuV/m indoor portable.
  - 76dBuV/m indoor handheld.
  - Where Interference Limited coverage is stated, this is calculated using the interfering transmitter data and ERPs as stated in the multiplex advertisement.
- 35. MuxCo Yorks proposes to launch with 2 transmitters:

**Bilsdale**

A high power transmitter using a new DAB antenna with a radiation pattern firing south east providing:

- Robust indoor coverage to most of rural North Yorkshire.
- Outdoor mobile coverage to major transport corridors including the A1, A1(M), A19, A59, A64, and A170.
- Broad coverage for mobile devices in most of central and eastern parts of rural North Yorkshire.

**Harlow Hill (Harrogate)**

An Omni-directional medium power transmitter providing:

- High quality indoor coverage to Harrogate and Knaresborough, which will enhance the coverage from Bilsdale.

- 36. Ofcom's advertisement identifies a potential adult (aged 15+) population of 695,681. Using these 2 transmitters, NGW calculates adult outdoor interference limited coverage of 429,245 within the PPA, and percentage coverage as follows:

	Outdoor Coverage (58 dB)		Indoor Coverage (65 dB)	
	Adults '000	% Covered	Adults '000	% Covered
Noise Limited	451,859	65.0%	338,916	48.7%
Interference Limited	429,245	61.7%	336,327	48.3%

37. From year 3 of the launch, coverage of Scarborough and most of the North Yorkshire Coast will be enhanced and improved using the site at Oliver's Mount.

**Oliver's Mount (Scarborough)**

A Cardioid antenna, medium power transmitter providing:

- High quality coverage for Scarborough and most of the North Yorkshire Coast.
- This is an area not currently served by a digital radio multiplex.

38. NGW has undertaken an initial coverage assessment of the three transmitter network, and forecasts the following population coverage:

	Outdoor Coverage (58 dB)		Indoor Coverage (65 dB)	
	Adults '000	% Covered	Adults '000	% Covered
Noise Limited	504,143	72.5%	401,864	57.8%
Interference Limited	483,371	69.5%	399,219	57.4%

39. MuxCo Yorks does not currently propose to implement any further transmitters. However, it is recognised that the passage of time may enable further development to take place in an economically viable manner. Analysis has been undertaken and candidate sites for transmitters would be:

**Acklam Wold**

An omni directional medium power transmitter providing high quality indoor coverage to York, enhancing the coverage from Bilsdale.

**Whitby Business Park**

A directional antenna, medium power transmitter providing serving an area not currently served by a digital radio multiplex.

Interference Limited	Outdoor Coverage (58 dB)		Indoor Coverage (65 dB)	
	Adults '000	% Covered	Adults '000	% Covered
Acklam Wold	500,068	71.9%	440,264	63.3%
Whitby Business Park	512,590	73.7%	454,873	65.4%

**Standalone Coverage**

40. The following table shows the coverage (Interference Limited) within the PPA of each individual site, demonstrating the considerable overlap between transmitters which will ensure a reliable signal to a significant proportion of the licensed area, even should one transmitter be on reduced power or have failed.

Transmitter Site	Standalone Coverage: Outdoor	Percentage Licence Area	Standalone Coverage: Indoor	Percentage Licence Area
Bilsdale	374,101	53.8%	258,042	37.1%
Harlow Hill	151,568	21.8%	97,407	14.0%
Oliver's Mount	79,720	11.5%	65,469	9.4%
<b>Possible Expansion</b>				
Acklam Wold	262,504	37.7%	182,881	26.3%
Whitby Business Park	16,294	2.3%	15,607	2.2%

## Cumulative Coverage

41. The table below shows how the overall PPA coverage (Interference Limited) is achieved up through the use of a network of transmitters.

Transmitter Site	Cumulative Coverage: Outdoor	Percentage Licence Area	Cumulative Coverage: Indoor	Percentage Licence Area
Bilsdale	374,101	53.8%	258,042	37.1%
Harlow Hill	429,245	61.7%	336,327	48.3%
Oliver's Mount	483,371	69.5%	399,219	57.4%
<i>Possible Expansion</i>				
Acklam Wold	500,068	71.9%	440,264	63.3%
Whitby Business Park	512,590	73.7%	454,873	65.4%

## Network Resilience

42. The following table shows the impact (Interference Limited) from the loss of one transmitter at a time, demonstrating its contribution to the overall network.

### Two Site Network

Transmitter Site	Cumulative Coverage Loss: Outdoor	Percentage Licence Area	Cumulative Coverage Loss: Indoor	Percentage Licence Area
Loss of Bilsdale	277,677	39.9%	238,921	34.3%
Loss of Harlow Hill	55,144	7.9%	78,286	11.3%

### Three Site Network

Transmitter Site	Cumulative Coverage Loss: Outdoor	Percentage Licence Area	Cumulative Coverage Loss: Indoor	Percentage Licence Area
Loss of Bilsdale	250,966	36.1%	235,854	33.9%
Loss of Harlow Hill	54,126	7.8%	62,891	9.0%
Loss of Oliver's Mount	54,770	7.9%	78,141	11.2%

## 5. Timetable for coverage roll-out

Outline the timetable in accordance with which the coverage proposed at Q.4 would be achieved, and the technical means by which it would be achieved. This should also be fully consistent with the more detailed information provided confidentially in response to Q.6.

43. Our proposal is to launch within 12 to 18 months of award. Assuming that the multiplex licence is awarded in December 2007, launch will be no later than 30<sup>th</sup> June 2009 using transmitters at Bilsdale and Harlow Hill. A third transmitter, at Olivers Mount, will be activated within 24 months of launch.
44. We have made contingent arrangements with NGW to ensure that this launch date can be achieved.
45. The main transmission site is Bilsdale, which currently transmits the BBC National and Digital One multiplexes plus the MXR regional multiplexes.
46. We have identified additional areas for potential future network enhancements. At present, transmitters for these areas are not planned and no date is proposed when these enhancements might prove feasible within the business plan. However, we wish to reserve the right to consult with Ofcom during the licence term to examine these and other opportunities to increase population coverage in an economically viable manner.

### Antenna Systems and Combiner

47. NGW will be the owner of all of the required antenna systems. Discussions on the antenna system for Bilsdale and Harlow Hill have taken place between NGW and NGW Network Access, and we are advised that no obstacles are expected to meeting the timetable for launch.

### Transmitter systems

48. NGW propose to use transmitters from Rohde & Schwarz (R&S) with whom they have a Frame Agreement. R&S has confirmed their ability to provide the necessary transmitter systems and installation services within the required timescales.

### Distribution

49. The distribution between the multiplex centre and the transmitters will be contained on NGW SHF link circuits and a BT E1 circuit. NGW confirms that it is able to install the new SHF link and BT E1 infrastructure within the timescale of the transmission roll-out.

### Accommodation and Power Requirements

50. NGW Network Access have confirmed that it can provide suitable accommodation and power supply at two of the sites and of the remaining site, NGW has negotiated new accommodation and power supply agreements with Yorkshire Water.

## 6. Detailed coverage proposals

Provide, in an electronic text file, details of the technical plan, which should consist of the following components: assignment details, implementation table, and implementation data.

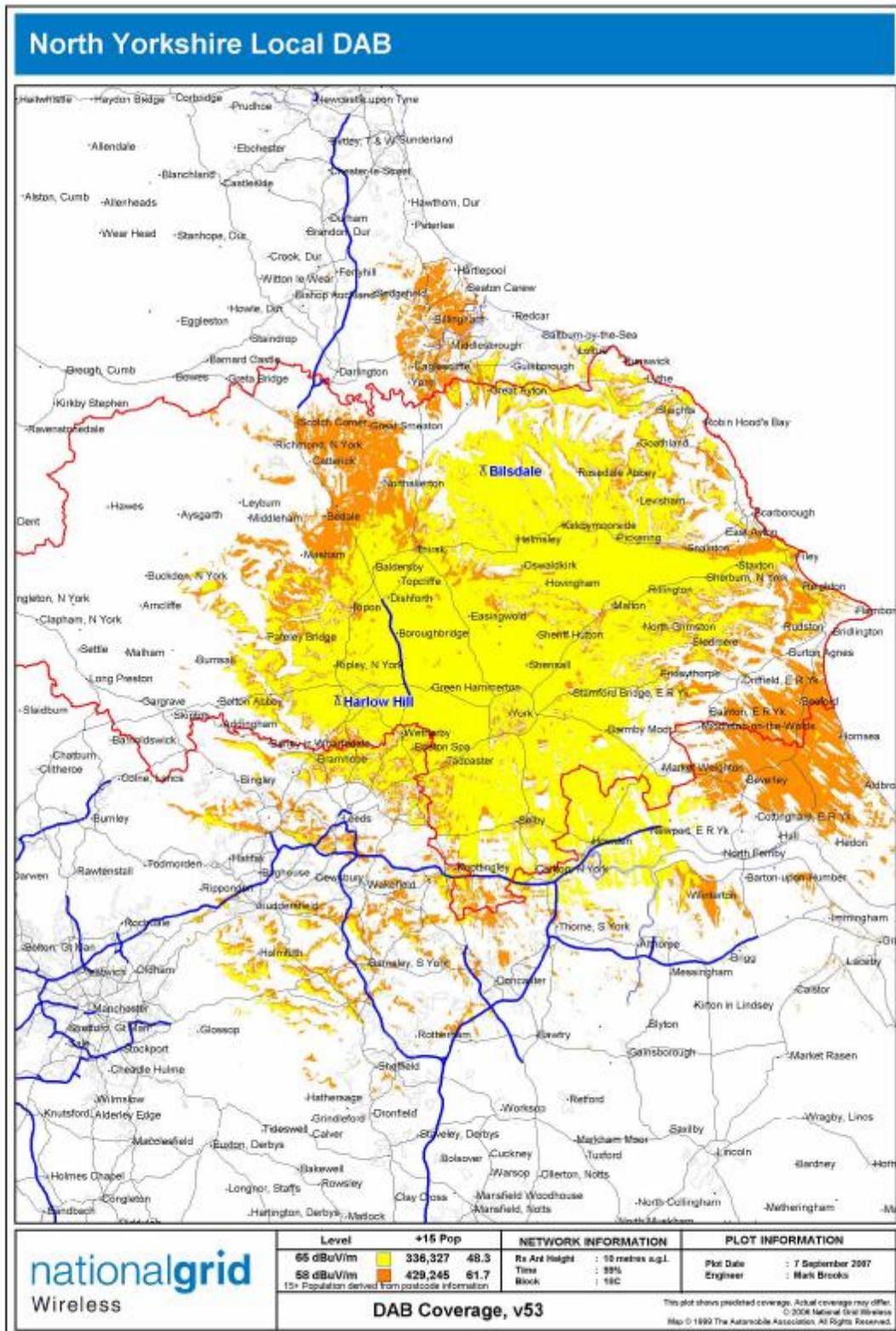
a) The first part of the technical plan is an electronic file of assignment details. This gives the relevant technical detail of each transmitting station which the applicant is undertaking to provide as part of its network. It will be used to enable Ofcom to estimate the coverage which will be achieved by the applicant, on a basis consistent with other applicants. It will also enable confirmation of the plan's compliance with Ofcom's various technical requirements. If more than one Technical Plan is proposed, a separate file should be submitted for each one. Each file of assignment details must be submitted in the data format specified at <http://www.ofcom.org.uk/radio/ifi/rbl/dcr/>. All files must be supplied in flat text format. This is the data format in which all transmitter co-ordination requests to Ofcom have been supplied to date, and is based upon ASCII97 defined by the European Radiocommunications Office – the Wiesbaden 1995 Plan management body.

51. The assignment details accompanying this application are provided under separate cover as an electronic text file.

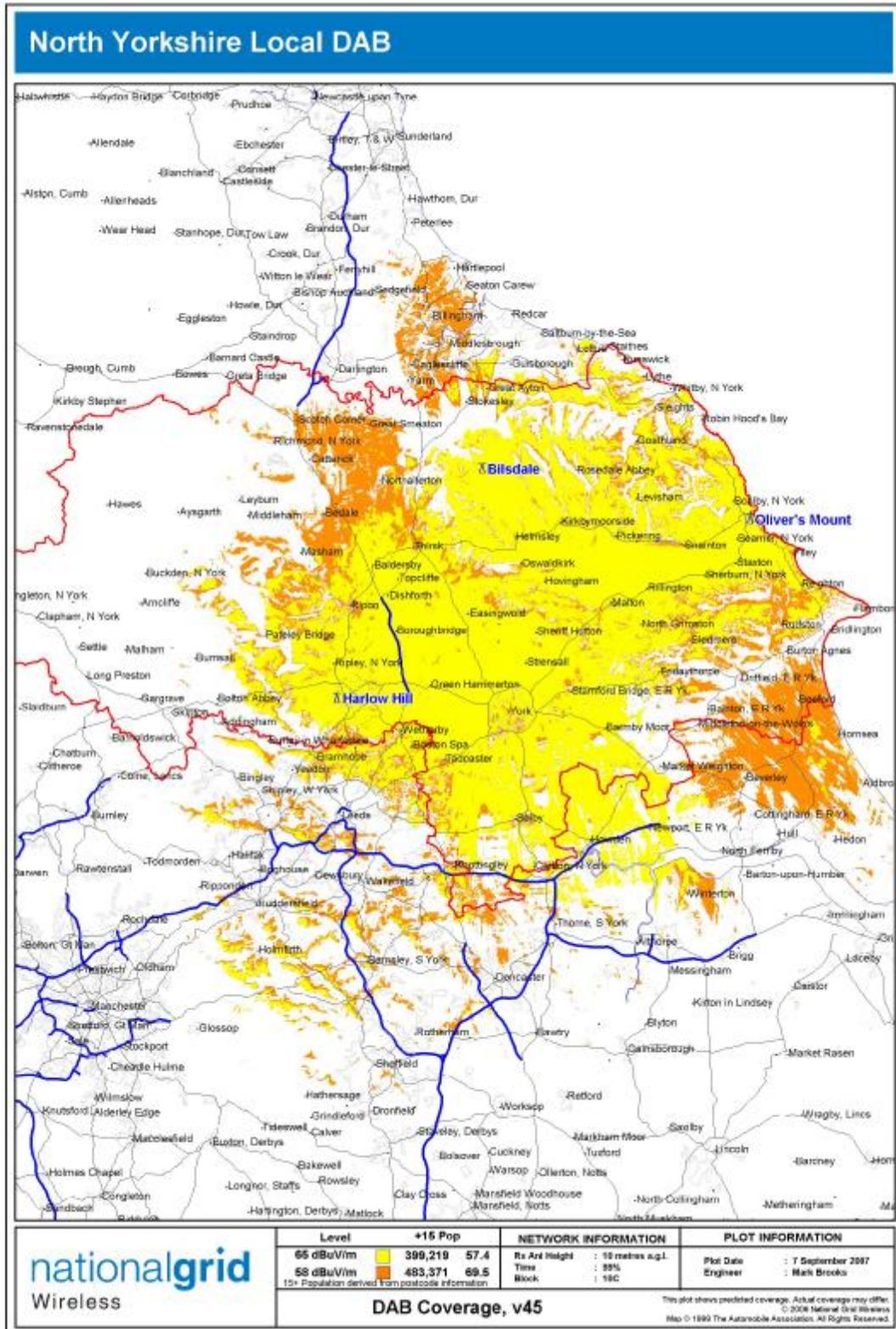
b) A separate table, the implementation table, should also be provided for the technical plan. This should list, for each proposed transmitter, the date of implementation promised with the parameters promised in the transmission plan, the owner/lessor of aperture space on the mast/tower, and any relevant accompanying notes. If it is proposed to introduce a transmitter with different parameters (typically lesser power or height) for an interim period, then on both lists there should be one entry for the initial assignment, and a second entry for the one which replaces it, with a note stating which transmission assignment is replaced.

Site Name	NGR	Date of Implementation	Owner/lessor of aperture space on mast/tower	Antenna height (metres)	Notes
Bilsdale	SE 5530 9620	H1 2009	NGW	275	NGW Network Access will provide 4 tiers of new 3 element yagi antennas.
Harlow Hill	SE 2891 5418	H1 2009	Yorkshire Water	30	NGW has an offer to install 2 tiers of new dipole antennas at this site.
Oliver's Mount	TA 0401 8692	From Year 3	NGW	25	NGW has an offer from NGW Network Access to install 2 tiers of new dipole antennas at this site.

52. The following map highlights proposed coverage at launch.



The following map highlights proposed coverage of the proposed 3 site network.



53. MuxCo Yorks proposes to use Bilsdale, a RAL site, but at an ERP 3dB greater than that listed. As such, NGW has examined the effect that the proposal may have on other services in the area.
- The area is currently served by BBC National, Digital One, MXR Yorkshire and MXR North East.
  - The new second national DAB service is also likely to provide a service here. The transmission parameters for this new service are not yet known and therefore the analysis will be undertaken once the parameters are known.
  - All these services with the exception of MXR North East use the national antenna. The greatest HRP difference between our proposed antenna and the national antenna is 6dB. The greatest ERP difference for a service in the national antenna is 7dB therefore no service using the national antenna should be affected by our proposal.
  - MXR North East uses a directional antenna beaming north with an ERP of 2kW. The greatest HRP difference is 18dB so the overall difference in ERP could be as high as 25dB on some bearings but these are all to the south where MXR North East does not serve. Additionally, MXR North East is 6 blocks away from our proposed service so we opine that running more than the RAL ERP limit will have no effect on any of the existing services using Bilsdale.

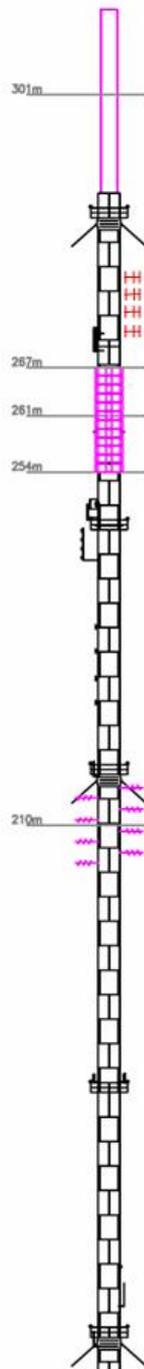
- c) Each transmission assignment should also be represented by site implementation data, specific to each transmission site (only one set of data for each site should be submitted). This detail is intended to elicit the practicability of the technical plan. For each site name (corresponding to assignment details and implementation table):
- i) If existing aerials are to be used, this needs to be stated and an explicit reference made. If not, then applicants should provide a sketch diagram (or set of diagrams), approximately to scale, of the portion of the supporting structure on which the radiating aerials are to be mounted. Show the radiating aerials, and the aerials of other services mounted immediately above, below, and at the same level as, the radiating aerials of the applicant's service.
  - ii) Provide details of the building at the site in which the transmission equipment is to be housed.
  - iii) Provide confirmation from each of the relevant parties that they have seen and agreed the applicant's proposals (to the extent that this includes new works) in respect of:
    - aerial mounting on the supporting structure, as proposed in the sketch diagram;
    - running of feeder cable from transmission system to aerial(s);
    - sharing of aerials and insertion/use of combiners, where relevant;
    - siting of transmission equipment;
    - supply of power;
    - building works (if any).
- The relevant party in each case, namely whoever controls the infrastructure (mast, cableways, building, power), should be named explicitly.
- iv) State whether and if so how the transmission arrangements are expected to change due to the TV digital switchover programme.

Note: submission of this information does not imply that Ofcom will validate the design of the aerial system. The licensee will be required to adhere as far as is reasonably practicable to the antenna pattern proposed in the assignment details, and in all cases to limit the maximum radiated power in any given direction as may be required by Ofcom.

i) Diagrams

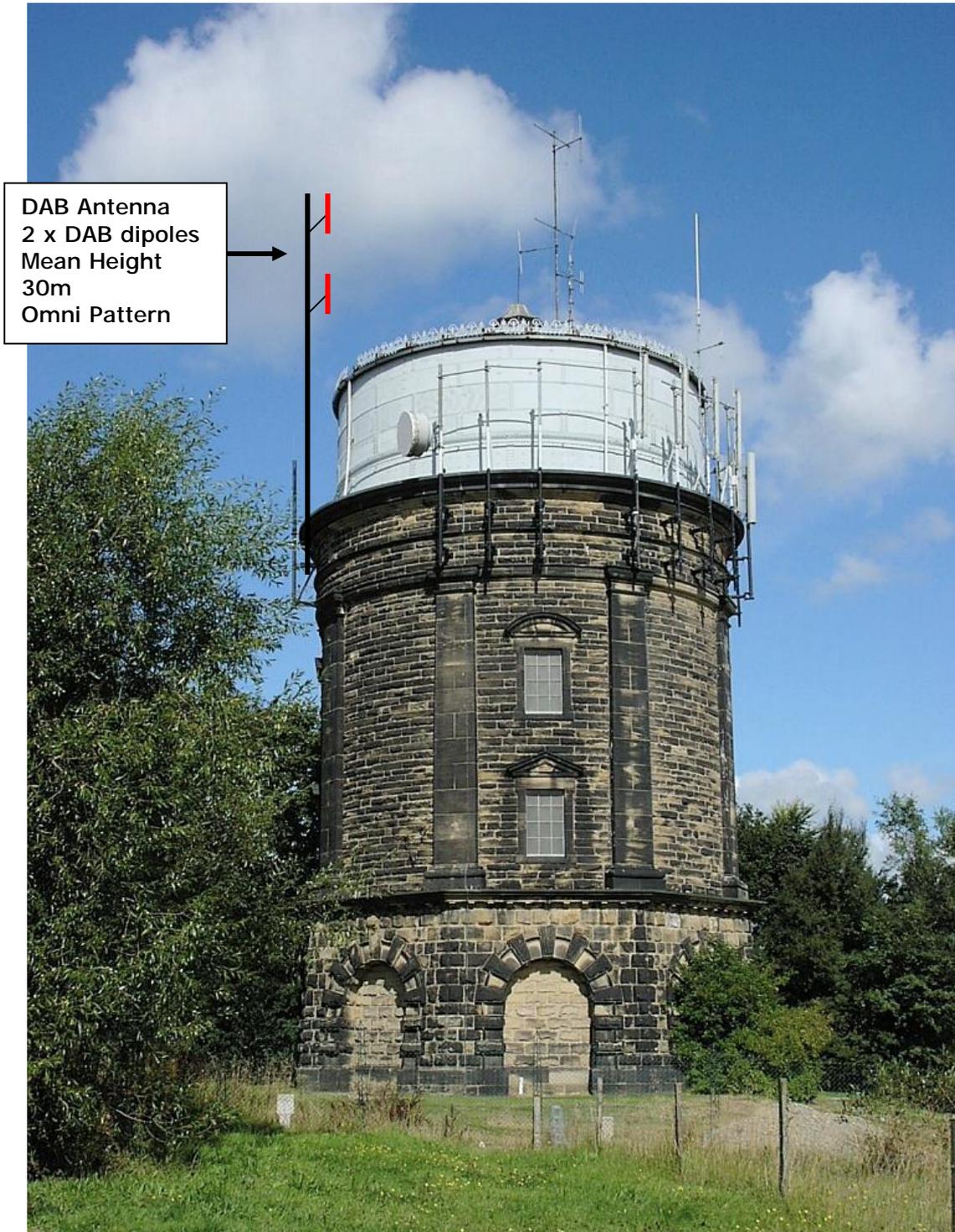
54. Drawings of each of the new proposed antenna at the transmitter sites are shown below in this document. All existing antennas are not shown as details are already known.

Bilsdale proposed DAB antenna sketch

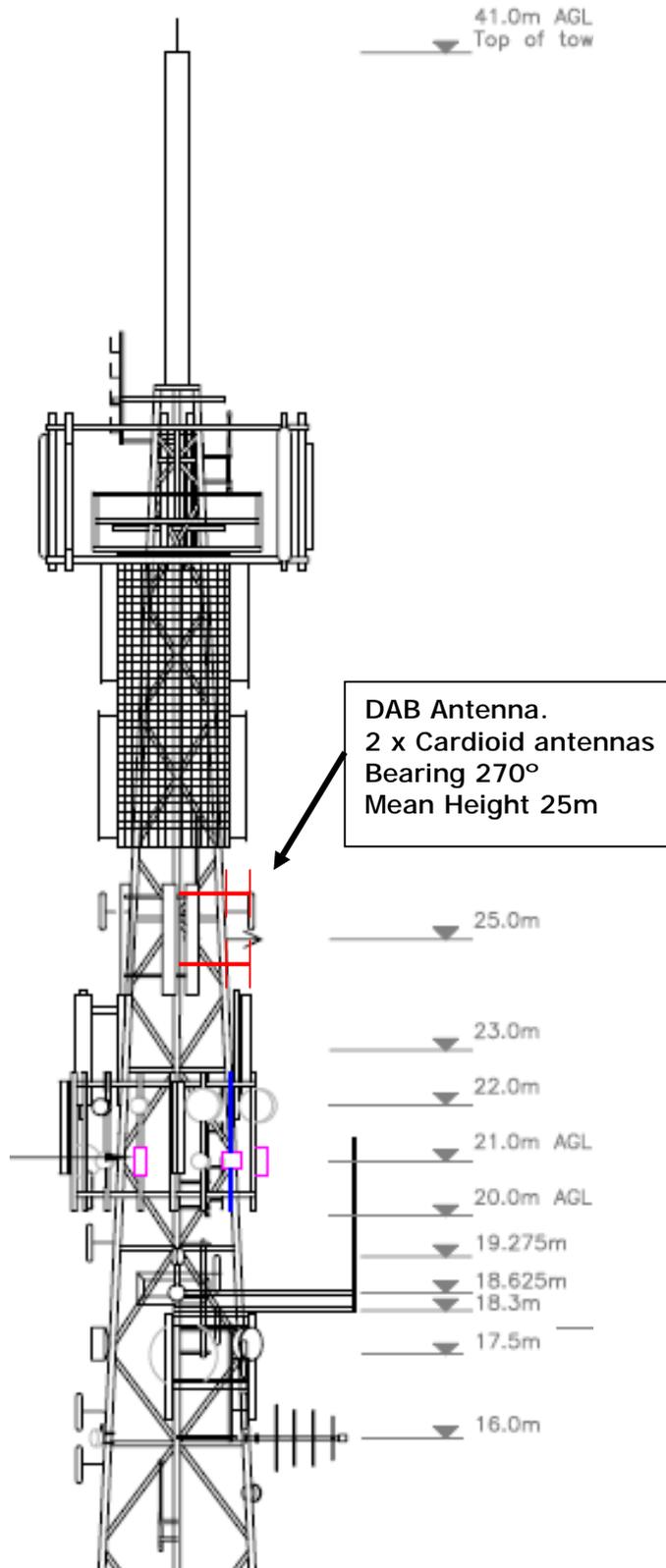


**DAB Antenna**  
**4 x 3 Element Yagi's**  
**Bearing 115°**  
**Mean Height 275m**

**Harlow Hill (Harrogate)**



Oliver's Mount



**ii, iii & iv) Transmitter Accommodation Antenna Systems, Power, and Building Works**

55. NGW has confirmed that the designs of the existing antennas and feeder systems are suitable for use at the powers indicated in the Assignment Details, and that the sites can be made available for the proposed transmitter systems. Electrical power is available. Minor building works are required in a small number of cases and NGW has confirmed that it will undertake these.

Site Name	Antenna System	Antenna Height (m)	Antenna Owner Permission	Accommodation Permission	Power Supply	Impacted By DSO
Bilsdale	New 4 tier 3 Element Yagi Antenna	275	NGW Network Access is to provide the new antenna system.	NGW Network Access is providing accommodation in the existing NGW Area.	To be provided by NGW Network Access	See Note 1
Harlow Hill	New 2 tier Dipole Antenna	30	NGW Network Access	NGW Network Access are providing new accommodation.	To be provided by NGW Network Access	No UHF at this site.
Oliver's Mount	New Antenna System	25	NGW Network Access	NGW Network Access is providing accommodation in the existing area.	To be provided by NGW Network Access	See Note 2.

**Note 1**

The DSO (Digital Switch Over) program for Bilsdale is still being agreed. However the impact is expected to be:

**2009 works**

- There will be mast strengthening work during 2009. This is not expected to a major impact the new DAB multiplex

**2010 works**

- To facilitate the DSO UHF antenna works, a small number of short periods of quarter power working are expected:
  - April and September 10 – 1 day (daytime only)
  - May and July 10 – up to 3 days (daytime only)

**Note 2**

The DSO program for Oliver's Mount will require the replacement of the Cardioid and cylinder at the site. The impact will be for a two week period in summer of 2009. This is not likely to impact the DAB multiplex as the DSO UHF antenna work is expected to be completed by the time this site is added to the network.



d) Provide the following details regarding transmission arrangements:

i) Any transmission contracts that have been agreed

56. In the event of winning the licence, NGW will undertake the provisions for transmission and multiplexing.

ii) The status of these agreements

57. Initial agreements exist with NGW to put the proposed contracts in place.

## 7. Other technical proposals

- a) Supply a network diagram, with associated tables and labels as necessary, showing in terms of functionality and (in principle) location: the source of each proposed digital sound programme service, digital additional service or television licensable content service, the point(s) of multiplexing, the point(s) of control of the elements of the multiplex (both FIC and MSC) and the distribution circuits to the transmitters. State the nature of the bearer circuit in each case, and its possible provider.
- b) For each of the data services proposed in Q.11(d) and Q.12, show: the transport mechanism within the multiplex on which it would be carried; whether stream or packet mode; the average net data rate (including any protection or encryption bits additional to those provided for in the ETS 300 401 specification); the range of data rates which might apply in any one transmission frame in support of the service, both net and (specifically attributable to the service concerned) gross; the protection mechanisms applying to their effective transmission (with reference to the options available in the ETS 300 401 specification, quantified where the specification provides for different numerical values to afford protection); whether it should be regarded as an additional service, a television licensable content service or an ancillary service; whether encrypted or not, and the encryption system envisaged; the use to which the data service would be put, including a justification for the multiplex capacity required. Outline how compliance will be achieved with the requirement that no more than the statutory proportion of the total multiplex capacity will be devoted to non-programme related data services; the figure excludes Synchronisation, MCI and SI). See also Q.20, about audio services.
- c) With reference to the response to Q.20, supply a diagram showing the relationship between the following elements of the multiplex: services; service components; transport elements (MSC sub-channels: dedicated, and X-PAD; FIDC).
- d) List any of the services in the multiplex which it is proposed be susceptible to interruption by announcements common to more than one service. If announcements are to be made on a geographically-selective basis, describe how this is to be achieved within the provisions of the ETS 300 401 specification.
- e) Describe how it is anticipated that the features of the ETS 300 401 will be used, if at all, in consideration of continuity of a programme service, or the offering of an alternative service, to listeners who lose reception of the multiplex signal, particularly in vehicles.

*The response to this question should be submitted in confidence.*

58. Our response to this question is submitted in confidence in Part B.

## **Section 51(2)(b): Timetable for commencement of services**

### **8. Commencement of services**

If it is envisaged that any of the digital sound programme services or their related ancillary services will not begin broadcasting from the start of the radio multiplex licence period, provide details of which service(s) will not commence from the launch of the radio multiplex service, the reason(s) for this, and an indication of the expected timescale for the commencement of the service(s).

59. It is envisaged that services will broadcast from the start of the radio multiplex licence period, with Yorkshire Coast Radio being carried within 2 years of the multiplex launch.

## **Section 51(2)(c): Ability to establish and maintain proposed service**

### **9. Ownership and control of company which will operate the licence (a) Board of Directors**

- i) Provide the name, occupation, other directorships, other media interests, background and relevant media experience of each director (executive and non executive), including the proposed chairperson.
60. Please see the following pages. It is proposed that the chair will rotate between the directors.
- ii) If there are firm plans to appoint any further directors, provide information (with details of any specific individuals in mind). This information may be submitted in confidence.
61. There are no firm plans to appoint any further directors.



## **Alistair MacKenzie**

Occupation:  
Finance Director, The Local Radio Company plc

Directorships:  
Alpha Radio Ltd, Anton FM Ltd, Barrow Broadcasting Company Ltd, Bath Radio Ltd, Bridlington Radio Ltd, Bromley Mencap, Brunel FM Ltd, Bucks Broadcasting Ltd, Central FM Ltd, Commercial Radio Pension Trustees Ltd, Conqueror Broadcasting Ltd, Dune FM Ltd, Durham FM Ltd, East Kent Radio Ltd, Fire Media Ltd, First Radio Sales Ltd, Huddersfield FM Ltd, Isle of Wight Radio Ltd, Ivel FM Ltd, Katz Television Sales Ltd, Katz UK Ltd, Minster Sound Radio (York) Ltd, Minster Sound Radio Ltd, Mix 107 FM Ltd, Mowbray Radio Ltd, Pennine FM Ltd, Radio Investments Ltd, Radio Services Ltd, Renaissance Radio Ltd, Silk FM Ltd, South West Sussex Radio Ltd, Sovereign Radio Ltd, Spire FM Ltd, Spirit of Oxfordshire Radio Ltd, Stray FM Ltd, Sun FM Ltd, The Local Radio Company plc, The Quay Radio Ltd, Three Towns Radio Ltd, TLRC Enterprises Ltd, Trinity FM Ltd, Two Boroughs Radio Ltd, Vale FM Ltd, Wessex Broadcasting Ltd, West Country Radio Holdings Ltd, Yorkshire Coast Radio Ltd

Other Media Interests:  
None

Alistair is Finance Director of The Local Radio Company plc ('TLRC') which operates 28 local stations from Arrow FM in Hastings and Ivel FM in Yeovil to Central FM in Scotland.

Alistair, along with Richard Wheatley, formed TLRC in 2004 to purchase the entire share capital of Radio Investments Ltd (one of the first investors in commercial radio, investing in London's Capital Radio back in 1973). Along with local stations, TLRC jointly owns and operates the national sales house First Radio Sales in London and Manchester with UTV.

As Finance Director of Jazz FM, from 1992 until its sale in 2002, Alistair was responsible for the financial, administrative, human resources, legal and regulatory affairs of the business. He was Jazz FM's representative on industry committees and a board member of MXR, a company established to operate regional digital multiplexes consisting of Jazz FM, Chrysalis, Capital, Ford, Unique and GMG.

Before joining Jazz FM, Alistair spent five years at Binder Hamlyn Chartered Accountants, where he gained broad experience of working with a wide range of clients. In his final two years with the firm he worked in corporate finance specialising in mergers and acquisitions, venture capital fundraising, working capital reports and flotations.



## **Gregory Watson**

Occupation:  
Managing Director

Other directorships:  
Reception Media Ltd, Folder Media Ltd, MuxCo Ltd, MuxCo Northeast Wales & West Cheshire Ltd, MuxCo Hereford & Worcester Ltd, MuxCo Northamptonshire Ltd, MuxCo Oxfordshire Ltd, Radio Academy, Radio Academy Trading Ltd, Children's Radio UK Ltd, Children's Radio UK (London) Ltd, The Digizone Ltd

Other Media Interests:  
None

Gregory graduated from the University of Exeter in 1986 with a degree in Accountancy studies, and commenced his career with KPMG Peat Marwick as a trainee accountant, where he qualified as a Chartered Accountant in 1990.

In 1991, he moved to the Radio Authority as Deputy Head of Finance. In this role his responsibilities were split between the management of the day-to-day financial operations of the Authority, the licensing and regulation of commercial radio and analysis of the radio and related media industries.

In 1998, Gregory joined GWR Group plc as Head of Special Projects, with responsibility for looking at all new analogue and digital opportunities. In this capacity, Gregory was involved in the submission by Digital One for the application to run the national digital radio multiplex, and played a significant role in the pre-operational period of that multiplex prior to its launch in November 1999. Gregory also oversaw the development of GWR's local multiplex network, NOWdigital, and of the consortia multiplex businesses of DRG London, South West Digital Radio and NOWdigital East Midlands.

In 2001, Gregory was promoted to Group Corporate Development Director; a role under which he oversaw GWR's strategic development in new media alongside the development of local and regional analogue and digital radio licences. Gregory played a central role in the merger of Capital Radio plc and GWR Group plc which led to the formation of GCap Media plc in May 2005.

Gregory has always been passionate about commercial radio broadening its horizons and developing new commercial opportunities. In 2005, Gregory orchestrated the establishment of Children's Radio UK Ltd as a joint venture between GWR Group, HIT Entertainment and Susan Stranks. The company launched FUN radio as the UK's first (and still only) radio station dedicated for pre and primary school children and their parents and carers.

In 2007, recognising that a significant proportion of the radio industry was being left behind by digital advancements, not because they were unable to take an active role but often were not encouraged to do so, Gregory left GCap Media to provide digital media advice to a number of independent radio and media companies.

Gregory is a Trustee of the Radio Academy, and is Chairman of Radio Academy Trading Ltd. Gregory takes an active role in the development of the radio sector, and in the past has sat on the RadioCentre's Public Affairs Sub-Committee and ad-hoc committees.



## **Deanna Hallett**

Occupation:  
Managing Director, Hallett Arendt

Directorships:  
Hallett Arendt Ltd, Folder Media Ltd, MuxCo Ltd, MuxCo Northeast Wales & West Cheshire Ltd, MuxCo Hereford & Worcester Ltd, MuxCo Northamptonshire Ltd, MuxCo Oxfordshire Ltd

Other Media Interests:  
Fellow of the Radio Academy, Full member of the Market Research Society, Radio Centre RAJAR Research Committee

Deanna Hallett has more than 35 years experience in marketing and research. Her career began in 1972 at NOP working on audience and programming research with the first wave of radio licence applicants.

She developed her radio research skills at Independent Radio Sales where she ran a mini RAB working with advertisers, agencies and client radio stations to improve the position of radio within the media and specifically with agencies to heighten their knowledge and understanding of planning, buying and researching radio. With IRS client radio stations she advised in all areas of programming research, sales product knowledge training and station marketing. She was appointed to the board as Marketing and Research Director in 1982.

Deanna set up Hallett Arendt in 1986 to work with radio stations in sales training, programming research and all aspects of station marketing having launched Essex FM as the first format driven station in the UK. Deanna was also involved in the first stage of cable franchise applications.

At NOP, she was instrumental in developing the now established radio diary research methodology and has sat on the industry research committee since its inauguration.

Today, Deanna is acknowledged as one of the top licence consultants in the country, with Hallett Arendt holding a record of unparalleled success, both in the UK and Ireland. They have worked as part of the winning teams for Classic FM - the first Independent National radio station - and Digital One - the first national digital radio multiplex operator. They also have successfully worked on a host of local and regional analogue licences as well as the new generation of digital services, again, both local and regional.

In 2003 Deanna set up a training programme, specifically with programmers in mind – 'The Programmers Development Plan', which has already been implemented across the EMAP group.

Moving forward, Deanna aims to bring all her expertise to MuxCo by offering training, research and marketing advice to all its service providers in order to maximise the audiences and revenue to the multiplex.

## (b) Proposed Investors and Shareholding Structure

Full details of the proposed shareholding structure should be provided, including:

- iii) Names and addresses (the latter may be submitted in confidence) of all existing or proposed shareholders.

Shareholder	Shares	% Shareholding	% Loan stock
The Local Radio Company Plc 11 Duke Street High Wycombe Buckinghamshire HP13 6EE	24,000	60%	60%
MuxCo Ltd 96a Curtain Road London EC2A 3AA	16,000	40%	40%

- iv) Total number, class/classes of shares and issue price of shares (specify voting, non-voting, preference, other etc.).

62. 40,000 £1 ordinary shares issued at par.

- v) All voting shareholders and holders of 5% or more of non-voting shares and loan stock should be named. State the number, class/classes and price of shares to be issued to each investor.

63. See above.

- vi) Outline any shareholders agreements or arrangements which exist.

64. A standard shareholders agreement will be established.

- vii) Where a corporate body other than a current Ofcom licensee will be providing 30% or more of the required funding, details should be given of its directors and main shareholders, and of its activities.

65. A standard shareholders agreement will be established, with standard pre-emption and voting rights to all shareholders.

66. The shareholders have agreed heads of terms which cover key issues of governance relating to the company including shareholdings, board composition, funding, pre-emption, exclusivity and confidentiality. This will be incorporated into a shareholders agreement in the event of a licence award.

67. MuxCo Ltd is owned by Folder Media Ltd (75%) and National Grid Wireless Ltd (25%). Further information on MuxCo Ltd is provided in Part D.

- viii) Ofcom may request additional information (e.g. a banker's letter, statutory / management accounts) regarding the shareholders, or any other providers of finance, listed in the application.

68. We would be happy to provide any information as requested by Ofcom.

**(c) Involvement of the Applicant in Specified Activities**

Details are required of the involvement by the applicant and its participants (including shareholders or other subscribers of more than 5% of the applicant's total funding requirements) in any of the activities listed below, and the extent of the interest. For these purposes, the applicant includes associates of the applicant (i.e. directors and their associates and other group companies).

i) Advertising agencies  
None

ii) Newspapers  
None

iii) Other broadcasting interests

TLRC owns or has interests in the following licences:

2BR	Burnley and Pendle	Minster Northallerton	Northallerton & Thirsk
3TR FM	Frome & West Wilts	Mix 107	High Wycombe
Alpha FM	Darlington	Mix 96	Aylesbury
Arrow FM	Hastings	The Quay	Portsmouth
Bath FM	Bath	Silk FM	Cheshire
Central 103.1 FM	Stirling & Falkirk	Sovereign Radio	Eastbourne
Dune FM	Southport	Spirit FM	Chichester
Durham FM	County Durham	Stray FM	Harrogate
Fire 107.6 FM	Bournemouth	Sun FM	Sunderland
Home 107.9	Huddersfield	Vale FM	South Somerset
Isle of Wight Radio Ivel FM	Isle of Wight	Wessex FM	Weymouth & Dorchester
Minster FM	Yeovil	Yorkshire Coast Radio	Bridlington
	York	Yorkshire Coast Radio	Scarborough

In July, TLRC announced that it had entered into a heads of agreement with Portsmouth Football Club with the intention of forming a new radio company that would own the Quay in Portsmouth, Spirit FM in Chichester and Isle of Wight Radio. TLRC would own 74% of the new group, with Portsmouth Football Club holding 26%.

MuxCo has interests in the following licensees:

25% - MuxCo Northeast Wales & West Cheshire Ltd	33% - MuxCo Hereford and Worcester Ltd
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iv) Bodies whose objects are wholly or mainly of a religious nature  
None

v) Bodies whose objects are wholly or mainly of a political nature  
None

vi) Local authorities  
None

vii) Other publicly-funded bodies  
None

## 10. Financial and business plan

### (a) Overall Financial Strategy

Explain how the applicant considers it is able to establish and maintain, throughout the licence period, its proposed service. This explanation should include an assessment of each of the following, but is not restricted to these factors:

- i) The network construction phase
- ii) The operational start-up phase
- iii) Marketing
- iv) Ongoing operation of the service

### The Strategy behind MuxCo North Yorkshire

69. The strategy for MuxCo Yorks is:

- To establish an efficient and progressive business that reduces the financial burden on operators.
- To provide opportunities for all existing analogue services to broadcast on DAB, as well as create new services that broaden choice and provide new commercial opportunities.
- To create an environment that encourages businesses, both new and existing, local and national, to provide services on local digital radio.
- To re-emphasise local radio as an important part of radio's digital future.
- To become part of a MuxCo network of local multiplexes, sharing best practice and future opportunities
- To provide a good return on investment to shareholders.

### The Shareholders and their Digital Strategies

70. The Local Radio Company plc ('TLRC') owns and operates 27 local radio licences across the UK, from Falkirk in Scotland to Eastbourne, and from Hastings to Yeovil. Based in High Wycombe, TLRC was formed in 2004 to purchase the entire share capital of Radio Investments Ltd (one of the first investors in commercial radio, investing in London's Capital Radio back in 1973). TLRC jointly owns and operates the national sales house First Radio Sales in London and Manchester with UTV, creating radio advertising and marketing campaigns on 113 local radio stations across the UK. Within North Yorkshire, TLRC operates Minster FM, Stray FM and Yorkshire Coast Radio.

71. The senior management of TLRC were founder shareholders in the regional multiplex company MXR, demonstrating their commitment to 'going digital' in a cost effective and profit generating way. It is the intention of this same management to do the same on behalf of its stations in TLRC through MuxCo. TLRC recognises that the future of broadcasting will be digital and is committed to ensuring the group itself has a digital future. However, TLRC believes that a number of the existing DAB business models that have been adopted do not reflect the concerns and financial status of the smaller radio companies, such as TLRC. In addition, the management have kept a watching brief on the development of new digital technologies. The group's strategy is to play an active role in the development of digital radio, and to ensure that it goes digital at the optimum time. MuxCo is pleased to be working with TLRC. By working together, we can help ensure that beneficial changes in future technology can be adopted.

72. MuxCo Ltd was established to provide viable digital radio solutions to local radio companies and other parties interested in developing on DAB. The MuxCo management team has extensive experience as a multiplex operator at local, regional and national level. Locally it established and operated the NOWdigital network for GCap Media, as well as managed local multiplexes owned by consortia in which GCap Media was a partner (CE Digital, DRG London, South West Digital Radio and Now Digital East Midlands).
73. MuxCo's strategy is to build a network of local multiplexes, working with local partners in each area, to ensure opportunities exist for all existing analogue operators to broadcast on DAB. Working with local partners helps encourage, we believe, a more active role in digital radio, both through multiplex ownership and service provision. Under this model, partners receive financial benefits of ownership which helps reduce their net investment in DAB.
74. MuxCo believes that there is a strong business model to be developed for local multiplexes - one that provides a range of interesting services demanded by local residents. An added benefit to both the multiplex and the listener from the participation of such broadcasters is that, partly because of the limited resources they operate with, they are often at the more creative end of the radio spectrum. Further information on MuxCo is provided in Part D.

### The Business Plan and its Objectives

75. MuxCo Yorks has established a business model that will drive the company to provide a premium digital radio service. Four key objectives have been identified that will ensure that this goal is achieved:
1. To operate a multiplex that offers a wide choice of live and on-demand programme services which address local tastes and interests (as highlighted through our commissioned research), broaden choice and increase plurality.
  2. To promote and maximise take-up of digital radio receivers, by working with our analogue and digital service providers and through membership of industry bodies, such as the DRDB.
  3. To operate in a manner ensuring fair and effective competition.
  4. To operate a sound financial business, with confirmed service providers helping to demonstrate viability.
76. MuxCo Yorks is committed to ensuring that digital radio is successfully established. We are well resourced technically as well as financially to support the needs of the service providers.
77. The following chart summarises the reporting structure of the company.



78. The Board has responsibility for the company's business strategy; monitoring and reviewing trading performance; appointing and contracting with service providers; developing multiplex bandwidth policies; developing pricing structures; appointment and supervision of the Multiplex Manager and regulatory compliance. The Board will meet at least quarterly.
79. MuxCo Yorks has appointed Folder Media to provide multiplex management services. Folder Media is a company that has unparalleled experience in the day-to-day management of successful local multiplexes, and is currently managing UTV's local multiplex network. Folder Media will ensure that changes and any requirements from the service providers can be enacted in a timely and cost-effective manner. It will also ensure that it is abreast of technical developments to ensure that the multiplex is responsive to the changing radio marketplace. Further information on Folder Media is provided in Part D.

**(i) The network construction phase**

80. The network construction phase includes two stages – planning, building and testing. MuxCo Yorks will contract with NGW to provide a transmission solution, and on the basis of this commitment, NGW will fund the capital expenditure and installation of the infrastructure.
81. **Planning** – MuxCo Yorks has designed its transmission plan in association with potential service providers, in particular the BBC, to ensure that key population centres and major roads are well covered, and to take into account any local geographical issues. A number of iterations have been produced before settling on a plan that maximises coverage and meets our planning criteria. NGW has provided strategic support during this stage and will liaise with Ofcom for transmission matters on behalf of MuxCo Yorks.
82. **Building & testing** – Following award, we will work with NGW to finalise our plan and prepare milestones to the launch of the multiplex. This will include international clearance, the build timetable and service provider installation. As an established and respected transmission service provider, NGW has considerable existing resource and the infrastructure to build the proposed transmission network.

**(ii) The operational start-up phase**

83. The operational start-up phase includes contracting with service providers, monitoring the installation of multiplex equipment at service providers' studios (for both audio and data services) and ensuring that the necessary testing is undertaken prior to launch; liaising with Ofcom over the build process; ensuring regulatory issues are followed, including the issuing of DSPS licences; and liaising with the DRDB and service providers on marketing activity, including ensuring the postcode checker is up to date with the new coverage and service information.

### **(iii) Ongoing operation of the service**

84. As multiplex manager, Folder Media will be responsible to the MuxCo Yorks board for the launch of the multiplex and its subsequent day to day operation; in particular:
- Overseeing bit rate variations, enhancements or projects required by service providers, such as EPG tests, temporary services and data developments.
  - Working with service providers and the transmission subcontractor to maximise multiplex functionality and efficiency.
  - Monitoring and fault reporting, ensuring that the output of all service providers is correctly logged and compliant with legislation and codes
  - Helping to develop new revenue streams.
85. NGW has considerable resource and infrastructure to support the multiplex and as such will provide 24 hour monitoring of the network. By using a secure remote control system, NGW will control multiplex re-configurations, something MuxCo Yorks will have remote access to, should the need arise to take direct control. Multiplex reconfiguration will be undertaken in line with our policies and contractual agreements with service providers.
86. Folder Media will provide ongoing management cover for the multiplex, including purchase and sales ledgers, IT, secretarial, legal, marketing co-ordination and technical support.
87. Through the MuxCo website, we will promote digital radio generically and the services specifically. The main aim of the site, as well as providing a conduit of information between MuxCo Yorks and service providers, will be to help educate and inform listeners, advertisers and equipment retailers.

### **(iv) Marketing**

88. We believe that despite DAB digital radio having been 'live' for 9 years, by the time MuxCo Yorks launches, there will still be a considerable lack of understanding by the public about the benefits of DAB, something that needs to be addressed. We recognise that as a sole body, our voice will be too small and inefficient. We will therefore seek to join the DRDB (or any successor) and will actively support industry-wide generic promotion of digital radio. We will also propose to co-ordinate our local marketing activity with 4 Digital.
89. The key objectives of the press and communications activity will be to:
- Build interest and knowledge of DAB and specifically the radio services available
  - Build audience awareness and raise the profile of DAB and content offerings to the consumer
  - Build awareness amongst the trade audiences including advertisers and retailers

90. We will work closely with our service providers to help co-ordinate the locally focused marketing of digital radio generically, as well as of the services on the multiplex, with advice provided where relevant by Folder Media. In addition, service providers are likely to undertake their own brand marketing highlighting their appearance on DAB. We also wish to work with our service providers, particularly those that currently broadcast on analogue, to use airtime to promote DAB digital radio in a consistent manner across all MuxCo partner stations.
91. To fund membership of the DRDB, a contribution proportional to contracted capacity will be levied at cost from the month following the launch of the multiplex.
92. We believe that for listeners, multiplex owner identity is of little or no importance (and is potentially confusing). We will work with the DRDB to use a national through-the-line identity and graphic style that makes both digital radio and station brands the 'heroes'.

## (b) Funding

Detail the sources of finance that will be used to fund the licence, under the following headings:

Source of finance	£
Share capital	40,000
Loan stock	40,000
Leasing/HP facilities (capital value)	0
Bank overdraft	0
Grants and donations	0
Other	0
<b>Total</b>	<b>£80,000</b>

Applicants should provide evidence that sufficient funds are available to each investing shareholder to cover their proposed investments.

93. Letters of investment are provided in Part B.

Applicants should also provide a copy of the most recent unabbreviated accounts for each investing shareholder.

94. Recent accounts for TLRC have been provided under separate cover. MuxCo Ltd is a new company and details of its shareholders and funding commitment is provided in Part B.

Where relevant, provide information on:

- i) Loan terms (e.g. interest rate, repayment terms, redemption/conversion terms);
- ii) Assets leased.

All of the funding identified above should be confirmed to the applicant. Explanation should be provided if this is not the case.

95. Loan stock will be issued interest free, as and when required. Loan stock will be repaid in a timely manner as permitted by the cash position of the company.

### **(c) Financial Projections**

The purpose of this question is to allow the applicant to demonstrate its understanding of the market. The forecasts should be based on reasonable assumptions, which are logically applied and justifiable.

The applicant should confirm in writing to Ofcom that:

- a) The projections contained in the financial model have been properly and accurately compiled on the basis of the assumptions listed and explanatory notes accompanying the projections
- b) That the policies adopted follow generally accepted UK accounting standards
- c) Such accounting policies have been properly and consistently applied.

Ofcom may request independent confirmation of the above, in the form of a letter from a firm of authorised UK accountants, addressed to the board of directors of the applicant.

The applicant should provide financial projections for the pre-operational period and on an annual basis for the subsequent 12 year licence period. The projections must include:

- i) Profit and loss accounts
- ii) Balance sheets
- iii) Cash-flow forecasts
- iv) Appropriate supporting schedules

The forecasts should be supplied on an Excel spreadsheet or similar and guidance notes should be provided. The applicant must also complete and submit the spreadsheet located at <http://www.ofcom.org.uk/radio/ifi/rbl/dcr/> using information from its business model. Guidance notes for completion of the Template can be found in Annex 3 to this Notice. This section must include a full listing of the underlying assumptions on which the financial projections are based.

The application should detail how revenue figures were derived, distinguishing between:

- i) access fees
- ii) fees based on audience or revenue shares
- iii) other fees (please specify)

Revenue forecasts should also distinguish between digital sound programme services, digital additional services and television licensable content services.

The application should clearly set out the fee structure for each service provider, and explain the reasons for any differences in fees paid between providers.

*The response to this question may be submitted in confidence.*

96. Our response to this question is submitted in confidence in Part B.

## (d) Audience Projections

Provide the following information:

i) The projected adult (aged 15+) population of the Total Survey Area (TSA) within which it is intended to measure the audience of the digital sound programme services to be broadcast on this local radio multiplex service

97. The potential audience for the multiplex has been analysed using the combined TSA of Minster FM and Stray FM TSA (540,000 adults).

ii) Projections for audience ratings (e.g. weekly reach, average weekly hours of listening) of the digital sound programme services to be broadcast on this local radio multiplex over at least the first four years of the service, with detailed demographic breakdowns as appropriate

98. The following table summarises our audience projections for the simulcast analogue services and digital only services. In relation to the analogue services, we have forecast their total hours across both analogue and digital platforms, and then apportion digital hours.

	Year 1	Year 2	Year 3	Year 4
<b>Minster FM</b>				
• Weekly Reach %	16.0%	16.6%	16.9%	17.0%
• Ave Hours	8.5	8.5	8.5	8.5
• Total Hours '000s	734	762	776	780
• Digital Hours '000s	86	121	135	155
<b>Stray FM</b>				
• Weekly Reach %	8.4%	8.6%	8.8%	9.0%
• Ave Hours	8.5	9.0	8.5	8.5
• Total Hours '000s	386	416	404	413
• Digital Hours '000s	49	72	72	82
<b>YCR</b>				
• Weekly Reach %	8.0%	8.0%	8.4%	8.6%
• Ave Hours	9.0	9.0	9.0	9.0
• Total Hours '000s	389	389	408	416
• Digital Hours '000s	0	0	73	82
<b>Fresh FM</b>				
• Weekly Reach %	4.0%	4.7%	5.0%	5.5%
• Ave Hours	8.0	8.0	8.0	8.0
• Total Hours '000s	173	203	216	238
• Digital Hours '000s	22	35	39	47
<b>Easy Radio</b>				
• Weekly Reach %	3.0%	4.0%	4.5%	5.0%
• Ave Hours	6.0	6.5	6.5	7.0
• Total (& Digital) Hours '000s	97	140	148	189
<b>Traffic Radio</b>				
• Weekly Reach %	2.0%	3.0%	3.0%	3.0%
• Ave Hours	1.5	2.0	2.0	2.0
• Total (& Digital) Hours '000s	16	32	29	32
<b>Other new services</b>				
• Weekly Reach %	0.0%	0.0%	1.4%	2.2%
• Ave Hours	0.0	0.0	5.0	5.7
• Total (& Digital) Hours '000s	0	0	38	68

- iii) Projections for the total weekly number of listening hours anticipated for all digital sound programme services (national and local) both in absolute numbers, and as a proportion of all radio listening hours per week as recorded by RAJAR or equivalent audience measurement research, over at least the first four years of the service

	Year 1	Year 2	Year 3	Year 4
Population 15+ '000s	540	540	540	540
All radio hours '000s	11,585	11,513	11,464	11,391
All digital radio hours '000s	2,703	3,646	4,104	4,521
All digital hours as % of all radio hours	23.3%	31.7%	35.8%	39.7%
MuxCo Yorks multiplex hours '000s	270	401	534	655
MuxCo Yorks multiplex hours as % of all radio hours	2.3%	3.5%	4.7%	5.8%

- iv) The basis on which the estimates above have been calculated, and any assumptions taken into account.

### Audience projections for programme services

99. In estimating audiences, we have based our assumptions on RAJAR within the combined Minster FM (which includes Yorkshire Coast Radio) and Stray FM TSA. This has a slightly larger (+8%) footprint compared with the BBC Radio York TSA.
100. Projections for existing services are based on the performance of each service within this TSA, and for the proposed new services from our consumer research.

### Projections for the total weekly number of listening hours

101. In order to calculate projections for the total weekly listening hours for all digital programme services (national and local) both in absolute numbers, and percentages, we looked at the following factors to create a robust audience model:

- Population
- Total radio listening
- Digital share of listening
- The relative market shares of:
  - BBC Network
  - BBC Local
  - INR
  - ILR listening to stations originating in the area
  - Out of area ILR
  - Other radio listening

### Population

102. The proposed TSA covers 540,000 adults. We have reviewed RAJAR data within this TSA using rolled 12 month data to Q1 2007 over the past three years. Whilst we believe there will be population growth, we have held the population as a constant for the first four years of the licence period.

## Total Radio Listening

103. Over the 12 month period to Q1 2007, 91.7% (494,000 adults) of adults in the TSA have listened to at least one radio service, on average for 23.6 hours. This delivered total radio listening hours in the market of 11,676,000. Whilst the market has experienced a small rally in the total number of people listening to radio over the last 3 years, average hours of listening have declined (see Question 14 for full analysis).
104. Whilst we believe that increased radio choice will help stimulate the total market, a view confirmed by our consumer research, we believe it prudent to forecast some continuing decline both in the penetration of all radio and total hours delivered. Competition from a wide range of new media, ranging from more TV choice, mobile phone services and the internet will have an impact, especially on younger listeners. The following table summarises our forecasts of all radio reach and hours.

	Year 1	Year 2	Year 3	Year 4
Population '000s	540	540	540	540
Reach %	91.3%	91.2%	91.1%	91.0%
Reach '000s	493	492	492	491
Total Hours '000s	11,585	11,513	11,464	11,391
Ave. Hours	23.5	23.4	23.3	23.2

## Digital Share of Listening

105. To establish the potential share of listening attributable to digital, we have reviewed the digital radio penetration forecasts published by the DRDB, as well as other pertinent data as to the current and future take up.
106. Our penetration growth forecasts are based on the DRDB's 5 year forecast (published September 2005), which we have up-weighted using the known 2006 penetration data, and then carried forward the forecast growth on the basis of this new base. By 2010, the updated DRDB forecasts shows DAB household penetration increasing to 50%.
107. We are comfortable with the DRDB forecasts:
- The latest sales data from the DRDB is that 5.1m DAB sets had been sold by the end of June 2007.
  - 72% of the population are reported to be aware of DAB digital radio (source IPSO MORI Tracker Jan 07)
  - RAJAR Q2 2007 highlights that 26.2% of the population claim to listen to radio on a digital platform. 13.2% claim to listen on DAB.
108. Our consumer research in North Yorkshire highlights that digital penetration in this market is on a par with the UK average. This is lower than has been the case to date in all other areas where MuxCo has applied for local multiplex licences.
109. We have had access to the long-term digital listening modelling undertaken by NGW as part of their national multiplex application. We have used their forecasts for digital share of listening as the starting point for calculating digital listening within the North Yorkshire area.

## The relative market shares of the radio sectors

110. We have analysed the radio sectors of BBC Network, BBC Local, INR (i.e. services broadcast on national platforms), ILR listening to stations broadcasting from within the area, out of area ILR and other radio listening.
111. The following table summarises our views as to how each of these sectors will change in terms of the numbers of services provided under each and their relative markets shares between today, 2010 (the first full year of MuxCo Yorks and the new national multiplex) and 2013. This analysis enabled us to establish a view on the overall radio market within North Yorkshire and the changes that each sector would experience. The detailed workings behind these numbers are provided in Part B.

	Analogue Stations 2007	Digital Stations 2007	Total Stations 2010	Relative share 2007	Relative share 2010	Relative share 2013
BBC Network	5	7	11	60.4%	55.4%	49.6%
BBC Local	1	0	1	8.5%	9.5%	8.6%
INRs	3	5	18	8.5%	10.8%	16.6%
ILR North Yorks	4	10	17+	10.8%	12.3%	13.6%
Out of area ILR	1+	1+	1+	11.2%	11.4%	11.1%
Other	-	-	-	0.6%	0.5%	0.4%
<b>Total</b>				<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

## Section 51(2)(d): Cater for local tastes and interests

### 11. Proposed digital sound programme services

Provide, for each digital sound programme service for which capacity is to be allocated, a description of the service. This should include a short-form (no more than four or five words) description of the type of service (i.e. its 'format'), and should also include a summary of the type(s) of music and speech to be provided, together with a quantification of the proportions of these within the programme mix. The number of hours each day that the service will be broadcast, and details of any content unique to this local area (with trigger-points for when such content will be included if not from the commencement of broadcasting, as appropriate), must also be included. These format descriptions will form part of the licence. Therefore, questions of clarification may be asked prior to licence award and the wording amended to reflect this, if necessary. Examples of format descriptions included within existing radio multiplex licences can be viewed at: <http://www.ofcom.org.uk/radio/ifi/rbl/dcr/>.

#### 112. MuxCo Yorks will offer carriage to existing analogue services:

- Minster FM
- Stray FM
- Yorkshire Coast Radio (by July 2011)
- Fresh Radio
- BBC Radio York

Each will be offered the opportunity to broadcast in stereo; an important requirement highlighted by our specially commissioned research. Together, these local services are listened to by 228,000 adults each week, some 42.2% of the adult population and represent 23.3% of total radio listening (these figures exclude Fresh Radio which is not currently in RAJAR).

#### 113. Capacity has been allocated for a number of new digital services, with two confirmed to begin broadcasting at launch:

- An easy listening melodic music service - *Easy Radio*
- A traffic and travel service - *Traffic Radio*

Specially commissioned local research demonstrates that these services cater for proven and demanded local tastes and interests. Spare multiplex capacity is sufficient to accommodate at least a further 3 services, which MuxCo will actively seek post award.

#### 114. Capacity has also been allocated for a Podcast Channel, which will provide an opportunity for niche services to provide downloadable content offering a range of programming which will be targeted at specific interest groups. These are likely to be organisations with a particular message, as well as groups who are looking to enter the radio arena, but who may not yet be in a position to fund a full-time service.

#### 115. We believe that technical improvements in the area of audio compression and the development of next generation DAB receivers could provide further opportunities to add new services in the longer term to further enhance local listener choice.

### Minster FM

Format	Local Full Service
Licence Description	A simulcast of Minster FM (licence AL135); a hits-based station providing local information for York and adjacent areas.
Local Content	Minster FM broadcasts local programming for 18 hours a day on weekdays and 12 hours on weekends.
Music to Speech	Minimum 85% music and 10% speech
Hours of Broadcast	24



### Stray FM

Format	Local Full Service
Licence Description	A simulcast of Stray FM (licence AL162); a tuneful music-led station for 25 to 54 year-olds in Harrogate and the surrounding area, highly focussed on local news and issues.
Local Content	Locally made programming for 14 hours on weekdays and 12 hours a day on weekends.
Music to Speech	Minimum 80% music and 10% speech
Hours of Broadcast	24



### Yorkshire Coast Radio

Format	Local Full Service
Licence Description	A simulcast of YCR (licence AL158); a hits based services providing local information for Scarborough, Bridlington and the surrounding area.
Local Content	Locally made programming for 14 hours on weekdays and 12 hours a day on weekends.
Music to Speech	Minimum 80% music and 10% speech
Hours of Broadcast	24



### Fresh Radio

Format	Local Full Service
Licence Description	A simulcast of Fresh Radio (licence AL192); a community-orientated music-led station for over 25s in the Yorkshire Dales and Skipton area, highly focused on local issues.
Local Content	Locally made programming 13 hours each weekday and 11 hours on weekends. Regular local news and information bulletins across the day.
Music to Speech	Minimum 90% music and 5% speech
Hours of Broadcast	24



### Easy Radio

Format	Easy Listening
Licence Description	A broad range of easy listening music with a significant element of tracks with a country crossover influence, including rock, folk and blues.
Local Content	A network service offering a broadening of local choice. There are currently no plans to introduce local content on this service.
Music to Speech	Minimum 85% music and 10% speech
Hours of Broadcast	24



### Traffic Radio

Format	Traffic and Travel
Licence Description	Continuous traffic and travel information.
Local Content	The service forms part of the North East region. As such, it will cover all motorway and key trunk roads within the region, including a focus on North Yorkshire's road network.
Music to Speech	100% speech
Hours of Broadcast	24



### Podcast Service

Format	Varied
Licence Description	A wide selection of podcasts provided by a range of companies.
Further Information	See below.
Local Content	A variety of podcasts will be made within, whilst others will provide information on the local marketplace.
Music to Speech	Minimum 5% music and 5% speech
Hours of Broadcast	24

116. The Podcast Service will provide an opportunity for a new raft of operators to broadcast on the multiplex. These may be operators who only wish to provide a limited service, or operators who are not yet in a position to finance a full service or demonstrate a substantial listener base, or operators who are established brands in other media but would like to test their content on a new platform, as well as providers of niche content carefully targeted at distinctive communities of interest.
117. We have had discussions with 4 Digital and propose to align our podcast delivery system. We have also had discussions with set manufacturers to ensure that new receivers are able to decode and store this material.
118. In our research, 19% of all respondents (40% of under 25s) were interested in being able to download new specialist music and or speech programmes and reflects, we believe, the lack of choice available to listeners in this market. Our research also shows that the public are keen to experience downloadable material on a variety of different subjects (further details of which are in the research section). We have tried to include podcasts that reflect many of these interests and will complement the proposed range of live audio services.
119. We believe that podcasts are a good way to meet listeners' content requirements where the economic benefit of running a live service cannot be met. We believe a better way of delivering certain material, in particular speech content, is through an on-demand podcast-style service. The lower cost base for production and transmission makes material easier and cheaper to distribute to local listeners.

120. Our initial podcast providers will include:

#### **News and Information**

- 'ITN On' will provide a news and information service. The service will initially be audio, but as technology develops ITN wish to review opportunities for video.
- 'Itchy Media' produce the Itchy Guides for major centres across the UK. York is a key focus, and Itchy currently produces a specialist website – [www.itchyyork.co.uk](http://www.itchyyork.co.uk). The proposed podcast will provide what's on information for the City.

#### **Music**

- 'Channelfly' produce one of the UK's biggest music magazines ('The Fly'), manage bands like Franz Ferdinand and the Kaiser Chiefs and operate a large network of music venues (including 'Fibbers' in York). Already a podcast producer, Channelfly will bring a unique music service to the area.
- 'Totallyradio' is an internet delivered specialist music service. Covering genres from hip hop to nu jazz, they will provide a range of specialist music created by their producers and local talent.

#### **Charity and Learning**

- 'Headliners' (formerly Children's Express) is a charity that encourages learning through journalism. They act as a news agency with young people writing and recording their own stories for broadcast. DAB podcasts are an excellent opportunity for local children to get their stories on the air.

#### **Specialist**

- 'Sabras Radio' broadcast on DAB in Leicester and London, as well as online. They are keen to develop local podcasts for specific areas and are keen to launch one for the local Asian population.
- 'Sunrise' broadcast a number of Asian services, and will broadcast their broad Sunrise Asian service on 4 Digital. Sunrise are keen to develop their youth Asian focused service, Yarr through podcasts in markets where the potential audience size is not sufficient to maintain a full service.
- Passion for the Planet are a DAB operator that are keen to expand but need to do at an appropriate rate. Their podcast will include best of material from their existing services with local features of interest to local residents.

#### **Local and Listener generated content**

We believe that digital radio should be open to as many broadcasters as possible. There are already many local podcasters in North Yorkshire. DAB offers them a new outlet for their locally-specific material:

- URY - University Radio York will provide student-orientated programming.
- Yorkshire Post – The Yorkshire Post have registered an interest to use DAB to develop their already successful podcast series.
- Seaside Radio – DAB podcasts will provide an opportunity for members of this community radio station to broadcast programmes further afield.

121. We believe that there is the opportunity to deliver much more material to local listeners. Indeed the combination of local operators, national brands and listener generated content will produce a unique service for North Yorkshire's listeners.

- a) Outline the expected target audience of each digital sound programme service to be accommodated on the multiplex, in terms of demographic profile (i.e. age range, gender, socio-economic background), ethnic composition, and/or any other relevant characteristics. To what extent will each of these services cater for local tastes and interests, general or particular?

Minster FM	
Target Audience & Demographic Profile	As North Yorkshire's heritage local commercial service, many tune into Minster FM for its local news, travel and information features, as well as its broad music repertoire. Its strength as a local service is evident through RAJAR, with 125,000 adults listening to the station each week in the planned multiplex TSA.
Local Tastes & Interests	Minster FM broadcasts half hourly news bulletins between 6am and 9am and between 4pm and 6pm, with hourly bulletins between 9am and 4pm. A 15 minute bulletin is broadcast at 6pm. Bulletins contain local and national stories, sport, weather and entertainment news. At weekends, local bulletins are broadcast between 7am and noon.
Summary	<p>Minster FM appeals to those with an interest in contemporary hit radio. Despite audience declines in the 12 month period ending Q1 06, Minster FM has seen recent improvements both in terms of numbers of listeners and listener loyalty. It remains the most popular local service across the county, providing local news and information.</p> <p>Existing ILR listeners demonstrate higher interest in DAB functionality, in particular being able to pause, rewind and record programmes, visual enhancements through a colour screen, music downloads, red button functionality than BBC radio listeners.</p> <p>Given its current strong market position and a predisposition of its listeners to utilise the ancillary advantages of DAB, Minster FM will play an important role in the promotion of digital radio. In addition, as an existing service, Minster FM is able to enhance its digital proposition with specific DAB only content.</p> <ul style="list-style-type: none"> <li>• Existing heritage service</li> <li>• 25 to 44 age profile</li> <li>• Female bias</li> <li>• Promoter of DAB and encourages trial</li> </ul>

<b>Stray FM</b>	
<b>Target Audience &amp; Demographic Profile</b>	Within its analogue TSA, Stray FM is listened to by 31% of all adults. It has a loyal audience, with average hours currently of 9.9 helping deliver a market share of 13.5%. It attracts a more female biased audience, with an appeal to those under 45. It delivers more ABC1 listeners than C2DEs, although lower than the population average. Within the larger North Yorkshire TSA, Stray FM's reach equates to 8.4%.
<b>Local Tastes &amp; Interests</b>	Stray FM editorial focus is on the Harrogate market. Local information and features of particular local relevance, such as whats-ons, entertainment, sport and travel information are broadcast across the day. Local news bulletins are broadcast between 6am and 7pm (1pm weekends), with extended weekday bulletins at 1pm and 6pm.
<b>Summary</b>	<p>Stray FM will benefit from the transition to DAB, being able to maintain listenership amongst its audience as they travel across the county. Its business model can be further advanced with the adoption of DAB ancillary and additional features that MuxCo will make available.</p> <ul style="list-style-type: none"> <li>• Existing local service</li> <li>• Under 45 age profile</li> <li>• Female strength</li> <li>• ABC1</li> <li>• Promoter of DAB and encourages trial</li> </ul>

<b>Yorkshire Coast Radio ('YCR')</b>	
<b>Target Audience &amp; Demographic Profile</b>	Within its analogue TSA, YCR is listened to by 42% of all adults. It has a loyal audience, with average hours currently of, delivering a market share of 19.9%. It attracts a more female biased audience, with an appeal to those under 45, although it also ranks highly with 45 plus women. It delivers a disproportionate to population level of C2DE listeners. Within the larger North Yorkshire TSA, YCR's market share equates to 3.2%.
<b>Local Tastes &amp; Interests</b>	YCR serves Bridlington, Scarborough and Whitby. Local information and features of particular local relevance, such as whats-ons, entertainment, sport and travel information are broadcast across the day. Local news bulletins are broadcast between 6am and 7pm (1pm weekends), with extended weekday bulletins at 1pm and 6pm.
<b>Summary</b>	<p>YCR will benefit from the transition to DAB, being able to maintain listenership amongst its audience as they travel across the region. Its business model can be further advanced with the adoption of DAB ancillary and additional features that MuxCo will make available.</p> <ul style="list-style-type: none"> <li>• Existing local service</li> <li>• Under 45 age profile</li> <li>• Equal appeal among the sexes</li> <li>• C2DE</li> <li>• Promoter of DAB and encourages trial</li> </ul>

Fresh Radio	
Target Audience & Demographic Profile	Fresh Radio has particular appeal amongst 35 to 54 year olds, with the target listener being male and aged 40 something. In terms of age it is found to have a very broad appeal with 42% of listeners aged 35 to 54. The service is likely to deliver a slightly higher proportion of ABC1s.
Local Tastes & Interests	Fresh Radio serves the Yorkshire Dales, in particular Skipton. Local information and features of particular local relevance, such as whats-ons, entertainment, sport and travel information are broadcast across the day. Local news bulletins are broadcast between 7am and 6pm (8am to 11am Saturdays), with the lunchtime bulletin sometime extended to include ad-hoc features.
Summary	<p>Fresh Radio will benefit from the transition to DAB, being able to maintain listenership amongst its audience as they travel across the region. Its business model can be further advanced with the adoption of DAB ancillary and additional features that MuxCo will make available.</p> <ul style="list-style-type: none"> <li>• Existing local service</li> <li>• 35 to 54 age profile</li> <li>• Female strength</li> <li>• ABC1</li> <li>• Promoter of DAB and encourages trial</li> </ul>

Easy Radio	
Target Audience & Demographic Profile	Our research highlights high interest in the Easy Radio concept, and that the service is likely to appeal to an older, 45 plus listener, who will account for 68% of the audience. Our research shows a slight male bias and a strength with ABC1s in line with the area average. Easy Radio should be a strong motivator to stimulate DAB take up, with 71% of those wanting this service currently not owning or accessing DAB. The format also recorded above average appeal among listeners to BBC stations, with 35% currently listening only to BBC stations.
Local Tastes & Interests	Easy Radio is essentially a music experience, with its broad range of easy listening music from 60s to today, and some music specialisation, such as country, creating a relaxing environment for the listener. Speech will include news, relevant information for the audience and an element of interactive programming.
Summary	<p>A popular format that would appeal to an older audience, bring new listeners to DAB digital radio and attract an audience from the BBC.</p> <ul style="list-style-type: none"> <li>• New service</li> <li>• 45 plus profile</li> <li>• Female bias</li> <li>• ABC1</li> <li>• Attractive to solus BBC listeners</li> </ul>

Traffic Radio	
Target Audience & Demographic Profile	The target audience for the service will be broad, appealing not just to business commuters, but also housewives and parents with children.
Local Tastes & Interests	An innovative service from the Highways Agency providing continuous localised traffic and travel service. The service would be a North East regional service, focusing on all major road networks. At the moment radio traffic bulletins are provided sporadically, at a time when the station wishes to provide them rather than when an issue arises. Their frequency also varies across the week, with significantly lower non-peak and weekend updates. This is a service which drivers would wish to be able to 'dip-in' to such a service prior to their trip or whilst in a vehicle.
Summary	<p>By making information on the road network more accessible, the proposed service will help reduce congestion by informing motorists about major congestions, thereby enabling them to divert, delay or cancel their journey. The benefit of the service is not just to individuals, but also to business. Reducing road journey times will help deliver environmental benefits through reduced emissions and improved driver safety. With broad appeal, the service should have a significant benefit on the take up of DAB receivers.</p> <ul style="list-style-type: none"> <li>• New service</li> <li>• Broad interest</li> <li>• Encourage DAB in-car listening</li> </ul>

- b) If agreement has been reached (either firmly or provisionally; state which) with particular providers of some or all of the digital sound programme services to be accommodated on the multiplex, identify these programme providers. For each one, state whether it has already been issued by Ofcom with a licence to provide a local digital sound programme service.

Service	Service Provider	Confirmed	DSPS Held
Minster FM	The Local Radio Company plc	Yes	No
Stray FM	The Local Radio Company plc	Yes	No
Yorkshire Coast Radio	The Local Radio Company plc	Yes	No
Fresh Radio	Laser Broadcasting Ltd	Yes	No
Easy Radio	Easy Radio Ltd	Yes	Yes
Traffic Radio	Highways Agency / Trafficlink	Yes	Yes
Podcast Service	Folder Media Ltd	Yes	No

- c) Give details of any programme-related 'data' or other services to be provided to enhance the audio elements of the digital sound programme services proposed to be provided. List separately those provided by the relevant digital sound programme licensees themselves (as 'ancillary' services) and those, if any, provided by other parties under a digital additional services licence.
122. We will provide opportunities for service providers to create new and innovative content streams. Our chosen multiplex platform will support Dynamic Label Services ('DLS') and MOT carousel using simple, industry standard interfaces allowing service providers to use the "off-the-shelf" and well-supported software packages for generating content. Therefore, from launch, all service providers will have access to:
- Rolling text functionality
  - Electronic Programme Guide
123. As data technologies and standards mature, we will work with service providers to launch other data services (such as Broadcast SlideShow, DABverts etc).

### **Dynamic Label**

124. DLS is a very simple technology, which gives it enormous strengths. It provides an immediate point of difference between a digital radio and a traditional FM receiver. Consumers value the information provided unexpectedly highly – informal feedback from listeners is very positive about features such as displaying information on the currently playing song. The industry has recently begun to develop DLS into a commercial opportunity, with advertisers recognising the value of DLS as an additional communications tool.
125. We are supportive of recent extensions to the DLS spec, such as Pure Digital's IntelliText® technology, which stores the scrolling text to allow the user to navigate, by topic, straight to the news they want. Service providers can generate DLS very simply, using a range of software packages that integrate into their existing systems. DLS is transmitted in the XPAD.

### **Electronic Programme Guide**

126. Electronic Programme Guides ('EPG') are important in a multi-channel environment – they allow listeners to find stations, programmes and content quickly, and enable functionality like "time-shifting" of stations. They enable service providers to promote their new services and programmes. The EPG allows the user to take advantage of features such as programme summaries, search by subject or channel, immediate access to the selected content and also to set reminders for their favourite shows.
127. Our research showed a comparatively strong interest in an EPG. We will make an EPG channel available to all service providers. This channel will conform to the ETSI TS 102 371 DAB EPG standard, currently broadcast by the two existing national multiplexes. We will encourage our service providers to use some of the more advanced features of the EPG, such as "series linking" and incorporating telephone, SMS, website and email addresses into the schedule data.
128. We have had detailed discussions with All In Media Ltd ('AIM') relating to the launch of an EPG channel on the multiplex. The EPG will be transmitted in a dedicated packet data channel.

## Use of variable-XPAD

129. From launch, we will enable each service provider to be able to run programme related data services within their short XPAD data capacity.
130. With Folder Media and other associates, we have a strong team who have substantial experience in the field of launching data services, ranging from the work that was undertaken on the world's first commercial data services in 2000 through to the development of standards such as the EPG and the launch of highly dynamic text services.
131. We intend to use our experience to help service providers to launch new programme-related data services. For example:

### Tagging (Book marking)

- The ability to log a song on your mobile phone / device in order to download it later.

### Broadcast Slideshow

- The ability to add visual content to make programmes and adverts more engaging, for example showing the cover of the record currently playing, or an image of the car being advertised.

### "Red button" functionality

- *Competitions and Voting* - a listener could use the red button to vote on the next tune to be played or select the correct answer to win a prize.
- *Enhanced Advertising* - an advert for a new car could be visually demonstrated through a screen, with red button functionality sending information via a URL link to the external car dealer's web site.
- *Rewards* – creating opportunities for listeners to get free content (perhaps music downloads) in return for responding to an advertiser's call to action, or clicking through to the web page could generate redeemable loyalty points.

## Other services

132. Folder Media, our data service provider, intends to provide music download capability such as the new Instant Music Buying Service 'Cliq' from UBC, which will provide a value enhancing service for radio services, providing opportunities for listeners to access and acquire music on the go.
- d) If it is intended to use an encryption system, state that this is so, and make clear to which digital sound programme services it will apply, and how listeners will subscribe to the service.
133. It is not proposed that any services will be encrypted and none of the proposed service providers has indicated an interest in encryption.

## 12. Digital additional services and television licensable content services

Provide details of any digital additional services and/or television licensable content services planned, other than programme-related data services (see Q.11(d) above), and the proportion of the total multiplex capacity which will be allocated to each of these. *The response to this question may be submitted in confidence.*

134. Our response to this question is submitted in confidence in Part B.

## Section 51(2)(e): Broadening of local commercial DAB choice

### 13. Broadening of choice

Outline how the programming provided by the local digital sound programme services (other than BBC services) proposed will broaden the range of local digital sound programme services available in the area, and describe the extent to which the proposed local digital sound programme services will cater for tastes and interests different from those already catered for by local digital sound programme services already available in the area. If the licence applied for is the first local radio multiplex licence to be advertised in an area, detail the breadth of programming delivered by the range of local digital sound programme services to be provided on that local radio multiplex alone.

135. North Yorkshire is currently served by MXR's regional Yorkshire multiplex (which covers 95% of the proposed PPA), with a number of local multiplexes covering fringes of the new multiplex. MXR currently provides the following services:

Galaxy 105	A simulcast of Galaxy 105, playing a mix of dance and rhythmic music and targeting young adults aged between 20 and 29 years. Speech includes regional news and entertainment features. Approximately 15% speech.
Real Radio	A simulcast of the Real Radio. A full service playing mainly adult contemporary music. Speech includes news, local information, weekday phone-ins and comprehensive sports coverage. Approximately 33% speech.
Yorkshire Radio	A radio station for fans of Leeds United Football Club, providing live match commentary and club news, as well as broader sports coverage including rugby and cricket. Music is classic pop hits from the last five decades. Approximately 60% speech.
Smooth FM	A simulcast of the Smooth FM London. A service targeted at listeners of all ages who enjoy jazz, soul, blues and R&B. Regional news and information will be introduced as digital penetration increases. Approximately 10% speech.
UCB UK	A contemporary Christian music service, providing a Christian perspective on today's lifestyle. Speech includes news, Christian teaching and short features. Approximately 35% speech.
UCB Inspirational	A music channel with uplifting, inspirational music comprising both contemporary and traditional favourites. A unique blend of Celtic, Southern Gospel, Classic Hymns and modern 'Praise & Worship' music provides refreshment to the soul in the context of a fast-paced world, bringing hope and encouragement to all. Approximately 0% Speech.
Choice	A networked service based on London's Choice FM, playing a blend of classic and recent urban tracks appealing to fans of this genre aged between 15 and 34. Includes regional news and information. Approximately 5% speech.
Heart	A networked service, featuring melodic adult contemporary hits together with classic tracks. Target audience is females aged 25 to 44. Includes regional news and information. During peak times includes four hours of locally relevant presenter led programming. Approximately 10% speech.
The Arrow	A networked classic rock service, appealing to 40 to 59 years old. Includes local news and information. During peak times includes four hours of locally relevant presenter led programming. Approximately 10% speech.
LBC	A service similar to LBC 97.3, a speech service with studio-based discussions and phone-ins, live debates and features, with regional news and information.

136. Breadth of programming has been measured within the MuxCo multiplex and against MXR.

<b>Minster FM</b>	
<b>Service</b>	Music comprises quality popular songs from the last four decades with no decade dominating the output. Whilst music led, information features of local relevance are evidenced throughout the programming including a daily news magazine programme.
<b>Broadening of Choice</b>	As a broad appeal service, there will be some music duplication by new digital services with Minster FM, as well as by similar formatted, locally focused analogue services. However, Minster FM's heritage position and editorial focus on York and the surrounding area will ensure that it continues to be a key local service and will act as a differentiator.

<b>Stray FM</b>	
<b>Service</b>	Music comprises quality popular songs from the last four decades with no decade dominating the output. Whilst music led, information features of local relevance are evidenced throughout the programming including a daily news magazine programme.
<b>Broadening of Choice</b>	As a broad appeal service, there will be some music duplication by new digital services with Stray FM, as well as by similar formatted, locally focused analogue services. However, Stray FM's position and editorial focus on the Harrogate market will ensure that it continues as a key local service and will act as a differentiator.

<b>Yorkshire Coast Radio</b>	
<b>Service</b>	Music comprises quality popular songs from the last four decades with no decade dominating the output. Whilst music led, information features of local relevance are evidenced throughout the programming including a daily news magazine programme.
<b>Broadening of Choice</b>	As a broad appeal service, there will be some music duplication by new digital services with YCR, as well as by similar formatted, locally focused analogue services. However, YCR's position and editorial focus on Scarborough and the coastal region will ensure that it continues as a key local service and will act as a differentiator.

<b>Fresh Radio</b>	
<b>Service</b>	Music comprises a broad spread of chart hits from the 60s to the present day. Whilst music led, information features of local relevance are evidenced throughout the programming including a daily news magazine programme.
<b>Broadening of Choice</b>	As a broad appeal service, there will be some music duplication by new digital services with Fresh Radio, as well as by similar formatted, locally focused analogue services. However, Fresh Radio's editorial focus on the Dales will ensure that it continues as a key local service and will act as a differentiator.

<b>Easy Radio</b>	
<b>Service</b>	A music based service playing a range of easy listening genres featuring familiar music from 60s to today and drawn from a broad library.
<b>Broadening of Choice</b>	The broader music mix of Easy Radio, in particular music from artists with a country crossover influence including rock, folk and blues, provides a point of difference and a broadening of choice over other proposed services and over the regional services of Real Radio, Heart and Smooth. Easy Radio's speech, with news and relevant information for the audience and an element of interactive programme, will also act as a point of differentiation. In addition, plurality of ownership provides additional broadening of choice.

<b>Traffic Radio</b>	
<b>Service</b>	A unique service providing regular and up to date traffic & travel information.
<b>Broadening of Choice</b>	Traffic Radio is a new and unique service, with no comparable service currently provided in this region (or across the UK). Whilst existing analogue services, BBC and commercial, provide traffic & travel bulletins, these are often limited in scope and only broadcast during peak programming. Traffic Radio provides an opportunity for 24/7 reporting of traffic issues.

<b>Podcast Service</b>	
<b>Service</b>	A mixture of music and speech content, serving a broad range of tastes and interests that will complement the full time services carried by the multiplex.
<b>Broadening of Choice</b>	The inclusion of a Podcast Service will bring additional listening choice to the younger demographic.

## Section 51(2)(f): Local demand or support

### 14. Audience requirements

Summarise the main findings of any original market research undertaken, or any analysis of existing audience research information, or any other form of evidence which demonstrates demand for the types of programme service and/or programme-related data or other data services proposed, or has otherwise influenced the applicant's proposals.

If original market research has been undertaken, please provide the following information for each piece of research:

- a) A statement of the key objectives of the research;
- b) The specific questions that the research sought to answer;
- c) How the research was conducted;
- d) The size and composition of the sample(s);
- e) When and where the research was conducted;
- f) A summary of the main findings from the research, showing how these demonstrate evidence of demand for the service proposed – this summary should represent a fair and accurate summary of the full results;
- g) A copy of any detailed audience research report or analysis, from which the summary provided in the main application document has been derived, full data tables for any quantitative research undertaken, and any questionnaire used (these may be submitted in confidence).

Please provide your responses to (a) – (e) in tabular format.

	Key Objectives	Specific Questions	How Conducted	Size and Composition	When
Desk Research	To analyse the local market  To get an up to date picture of the digital landscape.	To review population growth and change.  To track digital penetration.	Analysis of Census 2001 data.  Review of DRDB and relevant RAJAR data on digital audiences.  Analysis of existing multiplexes.	Not relevant	June 2007
RAJAR	To understand the local radio market.	To track the performance, strengths and weaknesses of existing services.	Using the Octagon analysis system and RAJAR data.  Data evaluated over three years based on rolling data ending Q1 in each year.	Not relevant	June 2007
Consumer Study	To further understand the local radio market.  To gauge consumer awareness, understanding and usage of DAB digital radio.  To quantify interest in potential formats and data usage applications.  To estimate audience levels, individually and collectively, for the proposed complement of services.	To investigate the performance, strengths and weaknesses of existing services.  To identify the likely audience profiles for each planned service and to see how these services work collectively to enhance the total audience potential for DAB digital radio.  To look at the propensity to listen and the impact that the new services collectively would have on the existing market.	Consumer survey conducted by TNS.  All interviews conducted face to face using Computer Aided Personal Interviewing equipment.	300 adults 16+ from across the PPA.  Sampling PPS Quota controls to known demographic profile.	2 <sup>nd</sup> to 15 <sup>th</sup> July 2007

137. Through our association with NGW, we have also accessed the very considerable research dossier undertaken as part of their national commercial multiplex application.

138. We have provided an analysis of our research under the following headings:

- The North Yorkshire market
- Radio choice
- Current radio listening habits
- Uptake of DAB digital radio
- What people would like from digital radio in the future

## The North Yorkshire market

139. The North Yorkshire multiplex covers the county of North Yorkshire, the Unitary Authority area of York and northern districts of the East Riding of Yorkshire.
140. The City of York's history can be traced back nearly 2,000 years, beginning in earnest in AD71 when the Romans conquered the Celtic tribes known as the Brigantes and founded Eboracum which, by the fourth century, was the capital of lower Britain. Ravaged by William the Conqueror in the 11<sup>th</sup> Century, by the Middle Ages the city had become an important commercial centre, in Georgian times it was the social capital of the north, and by the 19<sup>th</sup> century, with the coming of the railway, its industrial future was assured.
141. The city lies at the confluence of the rivers Ouse and Foss. It is nationally prominent as a historical centre and one of the UK's most visited tourist destinations. It is a centre of excellence in, and home to 2 universities - the University of York founded in 1963, and York St John University, which was founded in 1841 and gained university status in 2006.
142. York's economy is based largely on tourism, science and service-based industries. This is very different from the position as recently as the 1950s, when York's prosperity was based on chocolate manufacturing and the railways. Most of the industry around the railway has gone, including the carriage works which once employed some 22,000 men. York is also famous for its confectionary. It was the home of Rowntree Mackintosh, which was acquired by Nestlé in 1988, producer of KitKat's, Smarties and the eponymous Yorkie bar chocolate brands. Terry's chocolate factory, makers of the Chocolate Orange, was also located in the city; but it closed in 2005 when production was moved to Poland ..... they have never been the same since! As well as Nestle, major employers today also include the council and Norwich Union.
143. Over the last few years, the city has responded to the relative decline in employment within the traditional local industries and invested in the development of a high-tech and science based industrial sector with some success. It continues to be a popular tourist destination, visitors to the city making a significant contribution to the local economy. The city has been enjoying rapid economic growth and as a result a rising population, there is now a shortage of housing. Traffic congestion and its impact on people's ability to get around the city continues to be a significant problem facing York.
144. North Yorkshire is England's largest county, and as a result is sparsely populated. Whilst the population is growing, it is getting older - by 2016 the number of people aged 65 and over is forecast to increase from 19% to c. 25% of the population. By contrast, young people under 19 will account for only 21%. 20% of the county's population live in either Harrogate (population 73,670) or Scarborough (population 49,390), with the balance of the population living in one of the 28 small market towns (only three towns have populations of more than 15,000 people) and the many small villages and hamlets. As such it is recognised that delivery of council services is more difficult and costly, particularly for elderly or disabled people living in rural areas, and that there are fewer facilities for young people in the rural areas.

145. The county has a healthy economy with low unemployment and a preponderance of small to medium sized businesses. Agriculture is an important industry, as are mineral extraction and power generation - the power stations at Drax and Eggborough generate almost 10% of England's electricity. Small businesses dominate, with 85% employing fewer than 10 people. There are high levels of self employment. In the private sector, tourism (around 12% of the workforce) and agriculture (around 3%) are very significant – particularly in the rural uplands where they account for as much as 50% of the workforce.
146. The table below summarises the population data for the City of York and North Yorkshire local authorities, and details this as a combined against the UK as a whole. It shows that the area has above average levels of those aged 45 and over. Less than 1.5% of the population is classified other than white highlighting low levels of ethnic groups within the population.

	City of York	North Yorkshire	Combined	UK	Index on UK
Total	181,094	569,660	750,754		
Adults 15+	151,342	467,274	618,616		
0 to 14	16.4%	18.0%	17.6%	18.9%	93
15 to 24	14.4%	10.4%	11.4%	12.2%	93
25 to 44	28.7%	26.9%	27.3%	29.3%	93
45 to 64	23.5%	26.6%	25.9%	23.8%	109
65 plus	16.9%	18.2%	17.8%	15.9%	112
Male	48.1%	48.7%	48.6%	48.7%	100
Female	51.9%	51.3%	51.4%	51.3%	100
White	97.84%	98.87%	98.6%	90.92%	108
Mixed	0.63%	0.45%	0.5%	1.31%	38
Asian	0.76%	0.28%	0.4%	4.58%	9
Black	0.19%	0.12%	0.1%	2.30%	6
Chinese or Other	0.57%	0.29%	0.4%	0.89%	40

## Radio choice

147. The following local commercial analogue radio services and local BBC service are currently audible in the county.
- Minster FM – York and North Yorkshire (owned by TLRC)
  - Stray FM – Harrogate (owned by TLRC)
  - Yorkshire Coast Radio 96.2 – Scarborough (owned by TLRC)
  - Yorkshire Coast Radio 102.4 – Bridlington (owned by TLRC)
  - Minster Northallerton - Northallerton, Thirsk and Bedale (owned by TLRC)
  - Fresh Radio – Yorkshire Dales and Skipton (owned by Laser)
  - BBC Radio York
148. Regionally, North Yorkshire is covered in part by the Yorkshire regional FM service (Galaxy) and by the South Yorkshire regional FM service (Real Radio, as well as by the MXR Yorkshire regional DAB multiplex (on which Galaxy and Real Radio broadcast).
149. In regard to national radio, the national services of the BBC and commercial services carried by Digital One are audible across the county. The county will also be served by 4 Digital from summer 2008.

## Current radio listening habits

150. RAJAR audience data has been analysed within the combined Minster FM (including Yorkshire Coast Radio) and Stray FM TSA over the last three years, using rolled 12 month periods ending Q1 in each year. The following table details total audience and hours to radio over the last three years.

	2005	2006	2007
Population '000s	529	530	540
Reach %	92.8%	91.3%	91.4%
Reach '000s	491	484	494
Total Hours '000s	12,149	11,567	11,676
Ave. Hours	24.7	23.9	23.6

\* rolled 12 month data ending Q1 in each year

151. The table highlights that whilst the number of people listening to radio has remained relatively constant over this period, there has been a small decline in the average time spent listening.

152. Radio audience data for the UK as a whole has also been reviewed to gauge how radio listening in North Yorkshire compares with elsewhere. The following table summarises RAJAR performance for the year ended Q1 2007 within the North Yorkshire TSA and compares this with the UK.

Market Share	North Yorkshire	UK
All BBC	68.1%	54.9%
• BBC Network	58.1%	44.7%
• BBC Local	10.0%	10.5%
All Commercial	31.4%	43.1%
• INR	8.1%	8.6%
• ILR	23.3%	34.5%
Other	0.5%	2.0%

Source RAJAR 12 months ending Q1 2007

153. The BBC dominates radio listening in North Yorkshire:

- 'All BBC' currently accounts for 68.1% of all radio listening, compared to its national average of 54.9%.
- BBC Network services perform significantly above average in this area (+30%).
- BBC Local is on par with its UK performance.
- Commercial radio's performance is almost 12 percentage points lower than the UK average; a result of the low level of local commercial choice currently available in this market, and its focus on the younger market under 45 plus demographic in contrast to the area profile which is older than the UK average.

154. The following table details the relative historical market shares between the BBC and commercial radio within North Yorkshire for three key age groupings, and compares the year ending Q1 2007 with results for the UK.

Market Share by Age	2005	2006	2007	12 mths ended Q1 2007 - UK
<b>15 to 34</b>				
All Commercial	52.3%	44.6%	49.6%	55.9%
All BBC	47.2%	54.1%	49.9%	41.7%
<b>35 to 64</b>				
All Commercial	30.8%	27.1%	29.0%	43.5%
All BBC	69.0%	72.2%	70.5%	54.5%
<b>65 pluses</b>				
All Commercial	13.9%	17.8%	17.3%	25.6%
All BBC	85.1%	81.9%	82.1%	72.9%

Source RAJAR 12 mths ending Q1 2005/6/7

155. Compared with the UK, commercial radio within North Yorkshire under-delivers in all age groups, resulting in BBC domination across the board:

- Commercial radio is strongest with 15 to 34s, where its market share is 49.6%. Whilst share is down overall over the three year period, 2007 saw an improvement. Looking at the 15 to 24 sub-group, ILR performs proportionately better, generating a 52.0% share. *We believe that additional youth focused content through the Podcast service will help improve commercial radio's position.*
- Among listeners in the mid age market, whilst commercial radio's performance has remained remarkably stable, with a small improvement over the last year, its share is still significantly below the national average. *Services such as 'Easy Radio' and 'Fresh Radio', alongside information content through the Podcast Service, will find great support in this age band.*
- We were not surprised that among those aged 65 plus the BBC performs best overall. Commanding 82% of all listening in this age group, commercial radio's share is significantly below the UK average. *'Easy Radio' will offer considerable appeal to this demographic group.*

156. Looking at the individual local commercial services within the larger North Yorkshire TSA, the following table summarises the historical performance of each ILR service over the last three years. Note - Fresh Radio does not currently participate in RAJAR.

	2005	2006	2007
<b>Minster FM</b>			
Weekly Reach %	16.5%	14.9%	15.7%
Total Hours	799	608	641
Market Share	6.6%	5.3%	5.5%
<b>Stray FM</b>			
Weekly Reach %	9.5%	9.2%	8.4%
Total Hours	470	359	381
Market Share	3.9%	3.1%	3.3%
<b>YCR Bridlington</b>			
Weekly Reach %	3.2%	2.6%	2.5%
Total Hours	216	120	120
Market Share	1.8%	1.0%	1.0%
<b>YCR Scarborough</b>			
Weekly Reach %	6.3%	4.6%	5.6%
Total Hours	437	253	260
Market Share	3.6%	2.2%	2.2%
<b>BBC Radio York</b>			
Weekly Reach %	16.7%	16.1%	16.2%
Total Hours	948	858	922
Market Share	7.8%	7.4%	7.9%

Source RAJAR 12 mths ending Q1 2005/6/7

157. The table highlights:

- Minster FM reach has rallied over the past 12 months. Average hours, though, continue to fall, resulting in a depressed market share.
- Stray FM has also experienced declines in both reach and average hours.
- YCR Bridlington has remained stable over the past 2 years
- YCR Scarborough, like Minster FM, has improved in the past 12 months with reach up and market share steady.
- BBC Radio York has been a regular performer with market share showing a strong improvement over the past 12 months indicating increased listener satisfaction.

158. Our consumer research supports the RAJAR results:

- Stations ever listened to:
  - o 89% have ever listened to a BBC service
  - o 75% have tuned in to a commercial station
  - o 50% have ever listened to an ILR station

*The low experience of ILR reflects poor choice in this market but also an opportunity to improve commercial radio market share.*
- Stations listened to weekly:
  - o 63% listen to a BBC service each week
  - o 44% listen to a commercial station
  - o Just over a quarter listen to an ILR station
- BBC Radio 2 was most popular with a weekly reach of 31%. This was almost twice as high as the highest scoring commercial station - Galaxy (16%). BBC Radio 1 received the second highest mentions (21%), with no other service mentioned by more than 12%.

159. Respondents were also asked what aspects about the local stations they listen to they particularly enjoyed.
- 42% enjoy hearing local news and information.
  - Just under a third enjoy the mix of music.
  - 18% value travel news.
160. Respondents were given the opportunity to say what their local station could do to make them spend more time listening to them.
- 14% would prefer to hear less commercials. This figure rose to almost a quarter amongst DAB owners.
  - 10% of respondents would like their local station to play a specific type of music they like.

### Uptake of DAB digital radio

161. The uptake of DAB in North Yorkshire is on par with the UK average. It is anticipated that with known new developments over the next 12 to 18 months, the potential DAB audience in North Yorkshire by the time the multiplex launches will be significant.
- 20% of adults in North Yorkshire claim ownership of a DAB digital radio.
  - Adding those who have access but do not yet own a DAB receiver, this figure rises to 30%.
  - A higher than average proportion of 35 to 54s (26%) are likely to be DAB owners. The same is true amongst under 25s (24%).
  - ABC1s were twice as likely as C2DEs to have a DAB radio (26% v 12%).
  - A higher proportion of ILR listeners had DAB, compared to BBC listeners (25% v 23%).
162. Amongst DAB owners, the following table details their profiles, comparing North Yorkshire (per our research) against the UK profile (per RAJAR).

	Profiles		Index
	Yorks Adults DAB Profiles	UK Population DAB Profile	Yorks Index on UK DAB Population Profile
	%	%	
<b>Men</b>	48.3	49.9	97
<b>Women</b>	51.7	50.1	103
<b>16 to 24</b>	18.3	17.4	105
<b>25 to 34</b>	13.3	14.5	92
<b>35 to 44</b>	25.0	19.4	129
<b>45 to 54</b>	20.0	18.6	108
<b>55 to 64</b>	15.0	15.7	96
<b>65 plus</b>	8.3	14.5	57

Source RAJAR Q2 2007

- DAB owning adults in North Yorkshire are more likely to be female, in line with the overall UK picture.
- By age, the highest owning age group were those aged 35 to 44 where ownership levels were disproportionately high when compared with the UK.
- Ownership was also above average with 15 to 24s, and 45 to 54s.
- Services which have a strong appeal to 55 pluses and under 35 year olds will most help drive DAB take up.

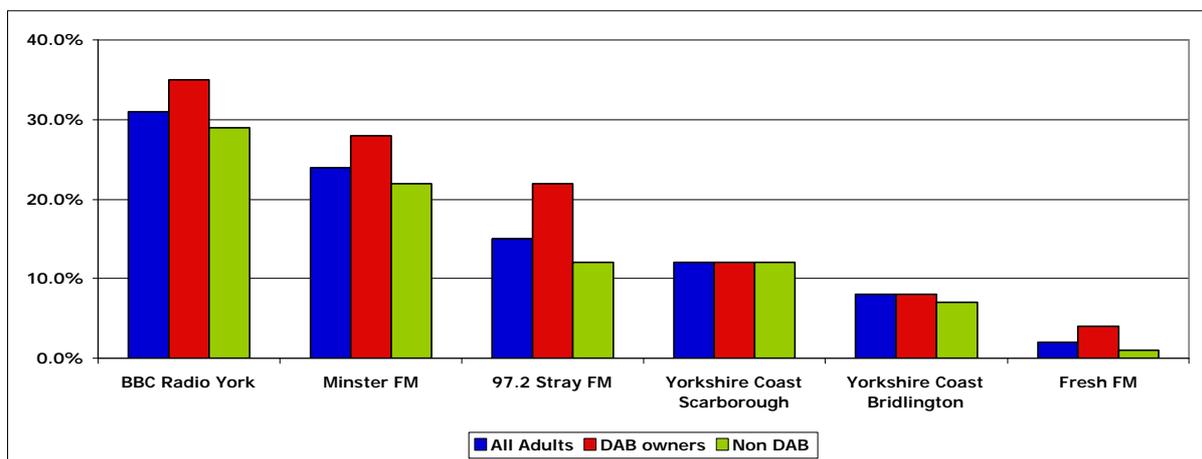
163. In our survey, DAB owners were asked what led them to purchase a set in the first place. The key motivators were:
- The improved sound quality of existing analogue radio stations (34%).
  - A desire to keep up with new technology (23%); with women more than men interested in this (33% v 12%).
  - Interest in hearing a wider range of new services (19%); especially so amongst under 35s (37%).
  - Interference free reception (17%); with women most interested.
  - Ease of tuning (14%); again with women most interested.
164. Having acquired a set, DAB owners were asked whether DAB had met their expectations:
- Once in possession of a digital radio, improved sound quality of existing radio stations was thought to be DAB's biggest asset (34%).
  - However, a higher proportion (21%) were subsequently attracted by the wider range of new stations.
  - Men still declared improved sound quality as the biggest asset (46%), while women were more inclined to say that a wider range of new services that better met their tastes and interests was the biggest asset (30%).
  - Under 25s were enthusiastic about improved sound quality (46%) and the ability to hear a wider range of new stations.
  - Appreciation of a wider range of digital radio's features and assets, including interference free reception and ease of tuning, generally increased with age.
165. Affect of DAB ownership / access on overall radio listening
- Overall, 18% of DAB owners claimed that they now listen to more radio than they used to, with 3% listening less (3%). The overall effect was a net rise in radio listening of 15%.
  - The impact on the under 25 age group was more pronounced, with 46% of DAB users in this age group telling us they now listen to more radio.
  - Men were almost twice as likely as women to listen to more radio overall (20% v 11%).
166. Non DAB owners were asked what would tempt them to acquire a DAB set:
- 35% would be tempted by improved sound quality of existing services.
  - Interference free reception was attractive to 31%.
  - Ease of tuning would appeal to a little under a quarter.
  - More than 1 in 5 people told us they would be drawn to a wider range of new stations.
  - In promoting DAB digital radio it is worth remembering that owners, especially women valued new services and hence promotion of choice would be important to attract female purchasers. This would be even more valid with under 25s for whom choice was the area most likely to stimulate purchase.
  - Under 25s also valued highly the prospect of improved sound quality of existing services in their listening repertoire (43%).
167. RAJAR Q2 07 highlights that 26.2% of all adults listen via a digital platform, accounting for a 12.8% share of all radio listening. Comparing the commercial sector with the BBC, we find that 13.8% of all commercial radio hours are delivered via digital compared with the BBC's 11.9%.

168. Looking at the specific digital platforms, DAB accounts for 54.7% of all digital listening. However, the level of listenership to DAB by commercial listeners was lower, 45.3% against the BBC's 64.9%. This is a result of the significant number of commercial services that are available via satellite DTV distribution.

### What people would like from digital radio in the future

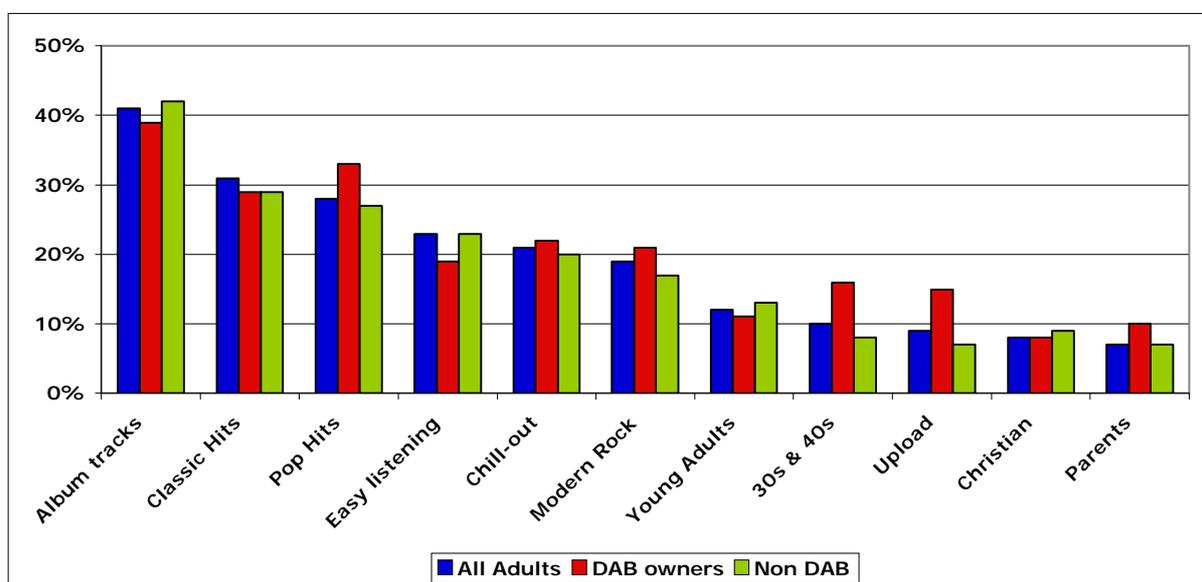
169. Having reviewed existing radio listening habits through RAJAR and our local consumer research, as well as exploring in greater depth the potential take up of DAB as a platform locally, the next stage of our research was to evaluate interest in accessing existing radio services and new formats, as well as data services.

170. The following chart summarises the results for existing local services.



- As expected, there is strong interest in being able to hear the countywide services of Minster FM and BBC Radio York.
- Whilst Stray FM, YCR and Fresh Radio scored lower, this is a reflection of their smaller analogue coverage areas.

171. Our consumer research also sought to gauge interest in a range of music genres:

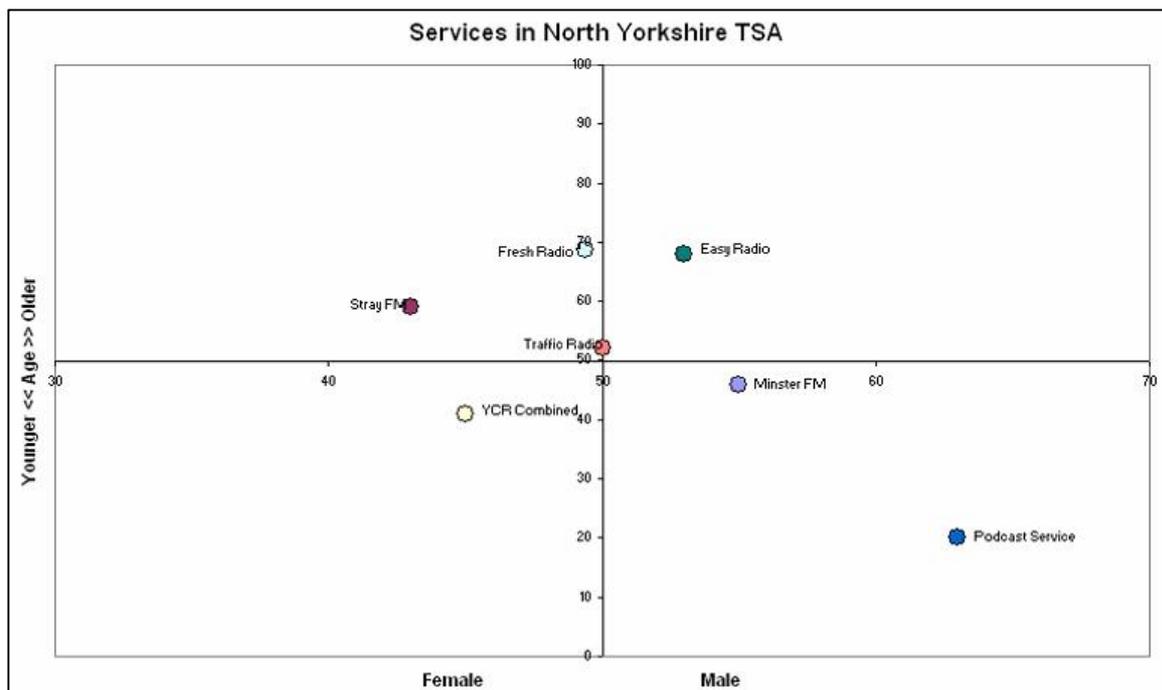


172. The following table summarises the anticipated audience profiles for the proposed services.

	Minster FM	Stray FM	YCR Combined	Fresh Radio	Easy Radio	Traffic Radio	Podcast Service
	%	%	%	%	%	%	%
Male	55	43	45	67	53	50	63
Female	45	57	55	33	47	50	37
16-24	15	15	27	29	5	14	30
25-34	12	11	18	29	9	14	25
35-44	26	15	14	42	18	17	25
45-54	16	21	27	-	10	18	9
55-64	19	21	14	-	25	17	6
65+	11	17	-	-	33	17	5
ABC1	60	54	45	50	58	62	59
C2DE	40	46	55	50	42	38	41

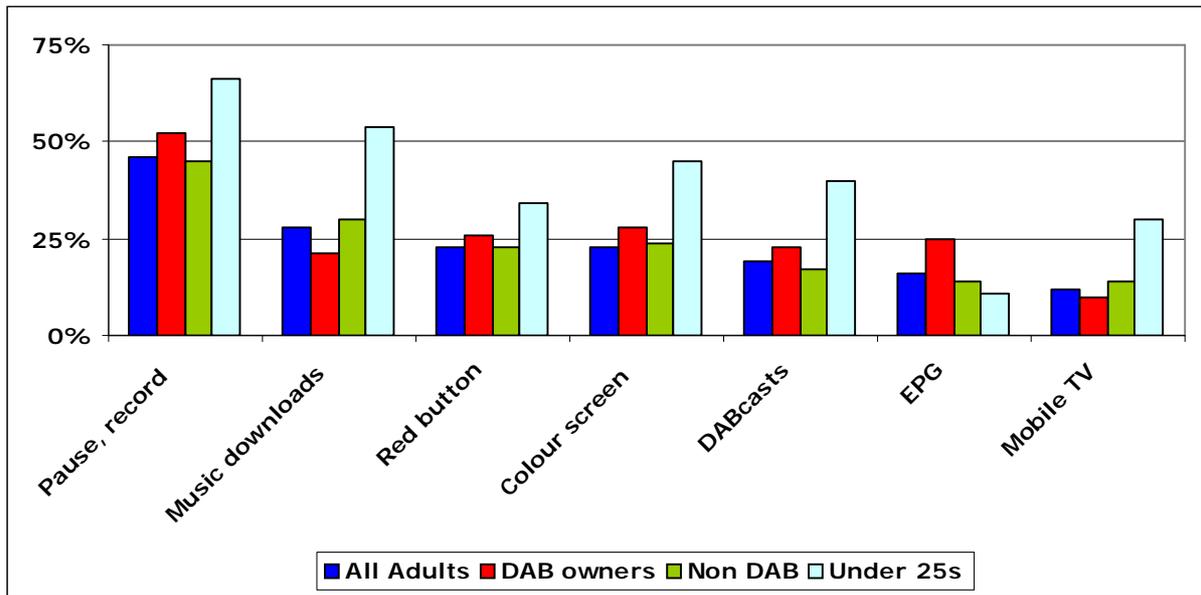
- Note:
  - Traffic Radio is based on all those who said they would like to receive this type of information in audio form at Q14.
  - Podcast Service is based on all those who said they would like to have access to these as an additional DAB service.

173. The following diagram demonstrates the strengths of the existing local commercial services, and the new digital services proposed. Rolled 12 month data ending Q1 2007 has been used for Minster FM and Stray FM, whilst all other services have been derived from our consumer research.



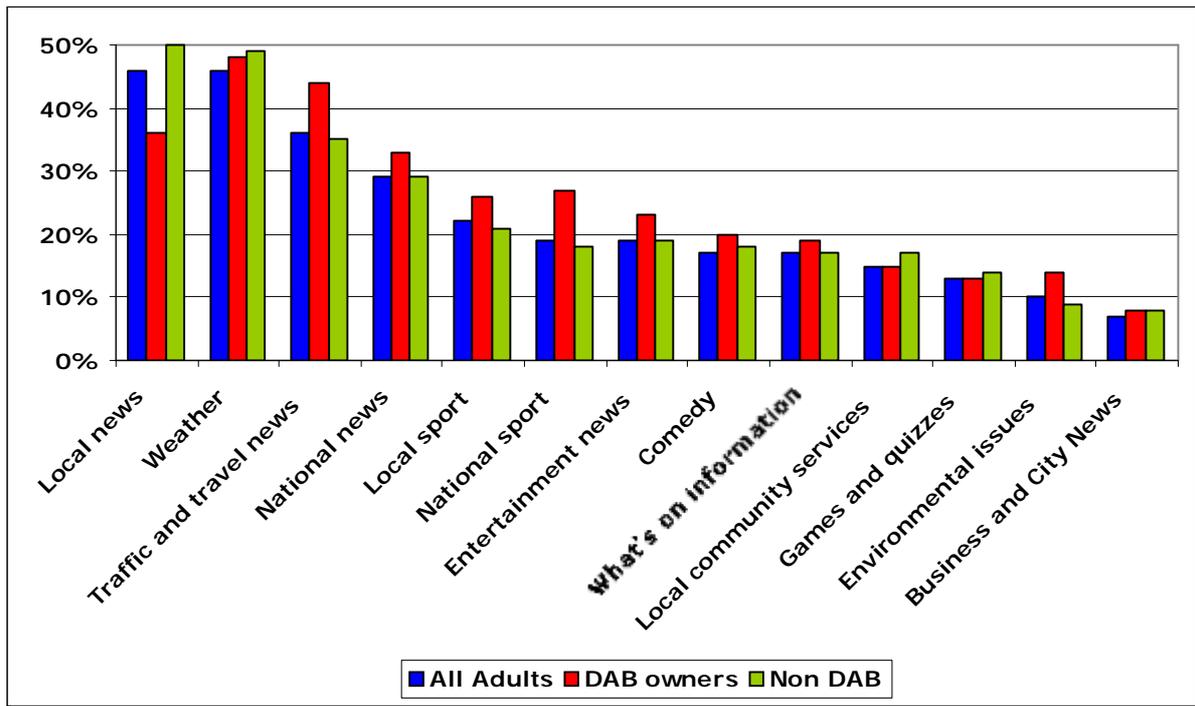
## Data Services

174. The opportunities for DAB to provide a range of data services that will either complement radio services or provide additional services is an important aspect of DAB. The following chart summarises views on a range of functionality that DAB sets could provide.

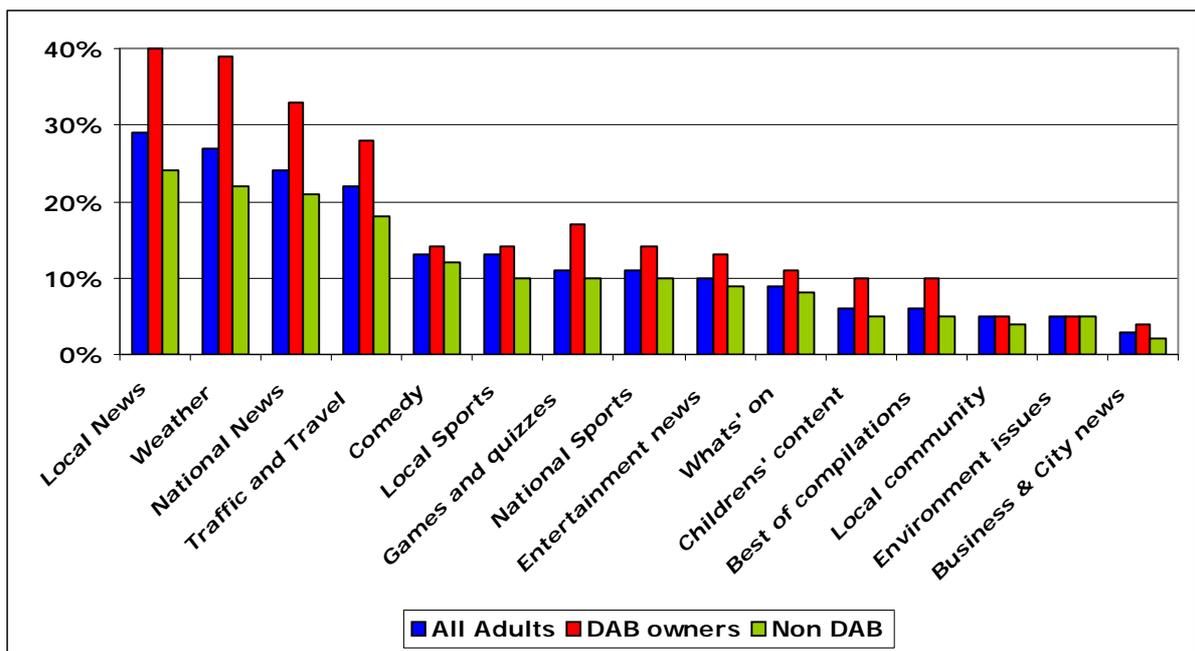


- The ability to pause, record and rewind was the most attractive prospect (46%).
- There was quite high interest in being able to purchase and save songs heard on the radio (28%).
- 23% expressed a liking for red button functionality similar to that available with television and/or a large colour screen capable of showing various images, photos or statistics.
- Existing DAB owners found almost all these functions of above average appeal.
- Under 25s generally expressed a higher degree of interest in almost any type of functionality, as well a different set of priorities and interests from their older counterparts:
  - Two thirds of under 25s would like the facility to pause, record or rewind programmes compared to the sample average.
  - Against the sample average, they were almost twice as likely to be interested in saving and purchasing songs they were listening to on the radio (54% v 28%), downloading podcasts (40% v 19%) or in having a large colour screen (40% v 19%).

175. The following chart summarises reaction to a range of possible services that could be accessed through a screen on the radio.



176. And as audio downloads.



- DAB owners were often much more interested in being able to hear each of these news and information types. In particular, local news headlines, weather, national news and traffic & travel.

## What does the future hold for digital radio?

177. The new multiplex, with its proposed complement of existing and new services, will help increase the amount of time spent listening to the radio.
- 54% said they would listen to one or other of the new services on the new multiplex by listening to the radio for longer.
  - Around a quarter would spend less time listening.
  - Only 6% said they would stop listening to some existing stations.
  - Under 25s showed a higher than average intention of increasing their listening to the radio in order to accommodate new services of interest. 53% would listen for longer, while 32% would listen to some of their current choices for less time.
178. In relation to which stations people would listen to less (in order to accommodate new ones):
- 61% would listen less often to BBC services.
  - 48% would listen less often to a commercial station
  - 42% would listen less to BBC services only.
  - The main individual stations likely to be affected were:
    - o Radio 1 (27%)
    - o Radio 2 (18%)
    - o Stray FM (17%)
    - o BBC Radio York (15%)
    - o Minster FM (11%)
179. In relation to those who would cease to listen to one or more station:
- Among the small proportion of people who would stop listening to existing stations, 59% would stop listening to a BBC service.
  - A smaller 30% would stop listening to a commercial radio station
  - Only 13% would stop listening to a local commercial station.
  - The main individual stations likely to be affected were:
    - o Radio 1 (37% )
    - o Radio 4 (10%)
    - o BBC Radio York (10%)
    - o Classic FM (9%)
    - o Magic 1161 (9%)
180. If the new stations were available today, the services carried by the multiplex are likely to command c. 36% of time spent listening. Amongst existing DAB owners / accessors, this was higher at 47% of time spent listening.
181. Respondents who are current radio listeners but who do not own a DAB set were then asked about their propensity to buy a DAB set.
- Overall, 50% were at least quite interested in buying one
  - A quarter were at least very interested
  - 11% said they were extremely or definitely likely to buy one.
  - If all those who at least quite interested in purchasing a DAB digital radio went on to do so, penetration would then reach around 60%.
  - Including only those in the definitely/extremely likely to buy category, penetration would rise from 20% to 28%.
  - Men were more inclined to become buyers (59% v. 42% women)

- Those people under 25 (82%) or aged between 35 and 44 (66%) showed the highest overall propensity to buy.
- Existing ILR listeners (61%) and commercial radio listeners generally (63%) were also more likely to say they are now interested in buying a digital radio set, than their BBC listening counterparts (58%) or those who only listen to BBC stations in particular (52%).

182. Finally, those who had claimed not to listen to any radio at the start of the questionnaire (8% of respondents) were asked whether having heard about digital radio and its possibilities, their radio listening habits might now change.

- 47% claimed that the prospect of listening to the new digital radio services had positively affected their interest in buying a DAB digital radio.

### **Overall conclusions from our research**

183. We believe that our research findings have given the citizens of North Yorkshire an opportunity to shape their radio choice for the future. The proposed new radio choices will help erode the BBC dominance in this market.

184. Information on likely levels of listening to each service has helped underpin our audience projections, helping to demonstrate the viability of each service and therefore the multiplexes ability to establish and maintain the service.

185. Overall, we have been able to demonstrate that our services are demanded, increase choice and would stimulate the purchase of digital radios.

## 15. Local support

Provide any evidence which has been gathered of local support for the provision of the proposed local radio multiplex service.

186. We believe that interest in the complement of services is best measured by the level of support for the services to be broadcast on the multiplex. The breadth of our research has been detailed in Q.14. Through this research, demand for each format has been evaluated, both individually and collectively on the basis of the chosen complement of services. The research studies have also evaluated interest in digital radio and the key drivers for the new technology, over and above pure choice of formats. The research also evaluated stations and formats which listeners wished to hear on digital radio.
187. We have discussed the DAB opportunity and our proposals with a number of local organisations and individuals, not to generate letters of support but to make sure that the opportunity is recognised and to build local relationships.

### *Research*

188. We will undertake on-going consumer research. This, in the main, will be undertaken in association with service providers through bodies like RAJAR. Such 'RAJAR' style research will assist service providers to measure audiences and the level of up-take, with obvious benefits to the subscribers. However, there may be times when there is a need to undertake original research, such as to evaluate demand for further potential services or to assess the style and level of content in programmes for contractual reasons. This research may be undertaken through quantitative, focus groups or desk research.

### *Marketing*

189. We will also have a marketing role in generating awareness of digital radio both as a concept and, alongside the service providers, of the complement of services carried on the multiplex.

### *Internet*

190. MuxCo Yorks will be served by a multiplex network website at [www.muxco.com](http://www.muxco.com). Through the site, MuxCo outlines its proposals and plans to apply for local multiplexes and seeks interest from prospective service providers. A copy of this application and further information about MuxCo and the licence opportunity are provided on the site.
191. In addition, the site will promote DAB digital radio, the services offered on each local multiplex, as well as links to other multiplex operators elsewhere in the country. The website will also provide a means of communication between the multiplex and service provider, in particular providing information on transmission issues and fault notices.
192. Whilst a local multiplex is a virtual company, what is not eliminated is the need to develop a relationship with the listeners about the services it carries. We will want to ensure that we understand the local population, their likes and dislikes, the market gaps and what other services it can provide. Therefore, although there is no wish to have a dialogue with the audience, there is a need to provide a means of access and communication.

## Section 51(2)(g): Fair and effective competition

### 16. Measures taken to ensure fair and effective competition

Detail the measures that have already been taken, and will be taken before and during the licence period, to demonstrate that "in contracting or offering to contract with persons providing digital sound programme services or digital additional services or television licensable content services, the applicant has acted in a manner calculated to ensure fair and effective competition in the provision of those services".

193. Our intention to apply for the licence has been documented on our website ([www.muxco.com](http://www.muxco.com)), which has provided an opportunity for prospective applicants to register their interests.
194. We have not advertised our proposals in local newspapers or the trade press, as our experience has identified that during the licence application process, such activity generates little response. Once operational, however, and with greater awareness of the multiplex in the locality, any new opportunities will be advertised in the trade press and local newspapers, as well as through the MuxCo website.
195. Following the advertisement of the licence opportunity, we contacted the identified analogue licensees (who would qualify for an analogue licence renewal in return for providing a digital programme service on the multiplex) to discuss their digital aspirations and invite expressions of interest in providing programme services, as well as local community groups and organisations. We also contacted other radio groups who have known digital aspirations or operate digital service elsewhere.
196. All companies who registered expressions of interest were sent a Service Provider Questionnaire. They were advised that information received would be used alongside research to decide which formats would be included and therefore which service providers would be accommodated in the multiplex application. A summary of all contacts is included in Part B.
197. Headline terms including approximate carriage costs have been supplied to the proposed service providers.
198. During the licence period a similar process will be adopted, with a standard questionnaire being used to assess applicants.
199. We have engaged with all potential service providers in an open and non-exclusive manner.

### *Fair and Effective Competition during the Licence Period*

200. Each service provider will enter a Service Provider Agreement; the key terms of which will be identical for all service providers. All fees charged will be based solely on a 'cost plus' basis, pro-rata to capacity contracted by each service provider. No fees will be related to revenue fees.
201. We will establish a Service Level Agreement with service providers. This will set out our communications and work policies, especially those relating to planned work and emergency outage notification.

## **17. Contacts with prospective service providers**

Provide a comprehensive list of all prospective providers of digital sound programme services and/or digital additional services and/or television licensable content services with whom the applicant has had contact prior to and during the preparation of this application, at the initiative of either party, and in whatever form. Summarise the nature of the proposals discussed and, for each proposal which is not among those planned for inclusion on the multiplex (as per Q.11 and Q.12 above), state the reason(s) why the prospective provider and/or the service(s) proposed by that provider has not been included.

*The response to this question may be submitted in confidence.*

202. Our response to this question is submitted in confidence in Part B.

## **18. Contractual and other arrangements with service providers**

For each digital sound programme service provider and/or digital additional service provider and/or television licensable content service provider named in this application:

- a) Supply details of the terms of access, including financial agreements;
- b) To what extent are any or all of these terms of access conditional? Clarify and conditions that exist.
- c) In respect of each named service provider for which details of terms of access are provided, supply a letter from the service provider confirming its agreement with the account of the terms of access provided above, and in particular with the fees it expects to pay.

*The response to this question may be submitted in confidence.*

203. Our response to this question is submitted in confidence in Part B.

## Technical quality

### 19. Division of multiplex capacity

Show, by means of a pair of clearly-labelled tables, the proposed division of the available multiplex capacity into digital sound programme services and other services during all time periods. The tables should depict the proportion of the total available capacity (in kbits/sec) which it is proposed to allocate individually to each of the digital sound programme services listed in response to Q.11, plus any capacity reserved for expansion, inclusive of any which it is proposed to allocate to digital additional services and television licensable content services. Please also indicate what proportion of these services will be programme-related (see paragraph 4.35). One of the tables should refer to the capacity units taken by each service (i.e. inclusive of capacity used for error protection), and the other table should refer to the bitrate net of error protection capacity, together with the associated protection level (1 to 5) which it is proposed to use, in accordance with ETS 300 401.

204. When allocating capacity, we have sought to achieve the optimum balance between existing and new services, and between quasi-national and local services, ensuring that there is sufficient capacity to develop ancillary and additional data applications which will help place radio at the centre of a multi-media, multi-platform UK.

205. The following table details the division of multiplex capacity by kbits between the proposed audio channels, data capacity and EPG.

Kbits Allocation	Service Type	UEP	6am to 12pm	12pm to 6am
Minster FM	MPEG1L2	UEP3	128	128
Stray FM	MPEG1L2	UEP3	128	128
Yorkshire Coast Radio	MPEG1L2	UEP3	128	128
BBC Radio York	MPEG1L2	UEP3	128	128
Fresh Radio	MPEG1L2	UEP3	128	128
Easy Radio	MPEG1L2	UEP3	96	96
Traffic Radio	MPEG1L2	UEP3	48	48
Podcast Service	AAC	UEP3	16	80
Data	DATA	EEP3A	56	24
EPG	EPG	EEP3A	8	8
<b>Total</b>			<b>864</b>	<b>896</b>
<i>Allocated as % Total</i>			<i>75%</i>	<i>78%</i>
<i>Data as % Total</i>			<i>6%</i>	<i>3%</i>

206. The following table details the division of multiplex capacity by Capacity Units (CUs) between the proposed audio channels, data capacity and EPG.

CUs Allocation	Service Type	UEP	6am to 12pm	12pm to 6am
Minster FM	MPEG1L2	UEP3	96	96
Stray FM	MPEG1L2	UEP3	96	96
Yorkshire Coast Radio	MPEG1L2	UEP3	96	96
BBC Radio York	MPEG1L2	UEP3	96	96
Fresh Radio	MPEG1L2	UEP3	96	96
Easy Radio	MPEG1L2	UEP3	70	70
Traffic Radio	MPEG1L2	UEP3	35	35
Podcast Service	AAC	UEP3	12	60
Data	DATA	EEP3A	42	18
EPG	EPG	EEP3A	6	6
<b>Total</b>			<b>645</b>	<b>669</b>

## 20. Basis of allocation of multiplex capacity

On what basis have technical decisions on the allocation of multiplex capacity to each of the proposed digital sound programme services been made?

How has the balance been determined between the number of services to be accommodated and the audio quality and robustness of reception which each will enjoy?

207. In allocating capacity between services, the following factors have been taken into account:
- A desire to increase listener choice and to provide a range of value enhancing data services
  - A need to provide a reasonable level of sound quality
  - To ensure robustness of reception
  - The wishes of individual service providers
  - The reserved capacity of the BBC
208. Our aim is to provide each service provider with the ability to broadcast in stereo. However, for smaller stations and new digital only services, a further decision that service providers need to make is the benefit of broadcasting in stereo, especially during the initial years of digital, versus the financial saving of broadcasting in quality mono. We confirm that the decisions on bit rate are those of each service provider.
209. Over the course of the licence period, we will work with Ofcom and the service providers in evaluating opportunities for services to broadcast in stereo using lower bit rates.
210. NGW have evaluated two different audio codecs at various different bitrates. They have found subjective differences that may lead to preferences for use of one codec over another, but dependent on the content and bitrate chosen. MuxCo Yorks therefore intends to offer a choice of codecs to our service providers. At low bit rates of 64 kbits or below, we will consider the use of half rate coding at the request of our service providers.
211. We have chosen an error protection level of UEP 3 as it has been shown through widespread experience to give a good balance between CU allocation on the multiplex and robust reception.
212. We note that the WorldDMB Forum has now released the DAB<sup>+</sup> specification. This specification brings with it a significant improvement in spectrum efficiency over the existing standard, but raises a number of migration challenges. We believe that this technology offers an opportunity in the longer term to increase the choice of audio services and enhanced data services on our multiplex. We would like to work with Ofcom to manage the introduction of DAB<sup>+</sup> services on the multiplex.
213. In reaching agreement with service providers, we will seek to contract flexible capacity allocations that will reflect the expected listening patterns of their individual audiences. As audiences vary in size and their daily activity changes, we will seek to provide service providers with the opportunity to vary their capacity up and down to meet their particular audiences requirements, by varying bandwidth to suit listening patterns. As the requirements of service providers develop, and enhanced data services are implemented, there may be increasing demand for regular multiplex re-configurations.

## 21. Audio characteristics

For each local digital sound programme service proposed to be provided, state whether it will be broadcast in 'stereo' or 'mono', and whether it will operate at 'full-rate coding' or 'half-rate coding'. The response to this question should be consistent with the proposed division of multiplex capacity set out in response to Q.20.

	Service Type	Stereo / Mono	Coding	Protection Level	Audio Sampling
Minster FM	MPEG1L2	Stereo	Full Rate	UEP3	48kHz UEP3 Stereo
Stray FM	MPEG1L2	Stereo	Full Rate	UEP3	48kHz UEP3 Stereo
Yorkshire Coast Radio	MPEG1L2	Stereo	Full Rate	UEP3	48kHz UEP3 Stereo
BBC Radio York	MPEG1L2	Stereo	Full Rate	UEP3	48kHz UEP3 Stereo
Fresh Radio	MPEG1L2	Stereo	Full Rate	UEP3	48kHz UEP3 Stereo
Easy Radio	MPEG1L2	Mono	Full Rate	UEP3	48kHz UEP3 Mono
Traffic Radio	MPEG1L2	Mono	Half Rate	UEP3	24kHz UEP3 Mono
Podcast Service	AAC	Mono or Stereo	Full Rate	UEP3	

214. The Podcast Service will be licensed under a DSPS licence. The nature of the downloaded content will define the format of the coded audio; files with a majority of music content will be in stereo but those with predominately speech content may be encoded as mono to conserve data capacity. The use of AAC audio encoders will, however, allow us to maximise the audio quality at lower bit rates by employing the Parametric Stereo and Spectral Band Replication options.
215. The inclusion of an AAC-based podcast service will also ensure that the new receivers that support it will be able to decode this codec, something that will likely make them capable of decoding DAB+ services when they come to the UK.

## Declaration

Applicants are required to conclude their submission by responding to the following question:

Do you confirm that, to the best of your knowledge and belief:

- a) the applicant is not a disqualified person in relation to the licence by virtue of the provisions of section 143(5) of the Broadcasting Act 1996 (relating to political objects);
- b) no director or person concerned directly or indirectly in the management of the company or the applicant group is the subject of a disqualification order as defined by section 145(1) of the Broadcasting Act 1996;
- c) no person involved in the application has been convicted within the past five years of an unlicensed broadcasting offence and that the applicant will do all it can to ensure that no person so convicted will be concerned in the provision of the service, the making of programmes included in it, or the operation of a radio station if the applicant is granted a licence; and
- d) any matters which might influence Ofcom's judgement as to whether the directors and substantial shareholders involved in the application are fit and proper persons to participate in a radio licence have been made known to Ofcom?

Applicants should note that Ofcom reserves the right to revoke a licence if at any time any material statement made is found to be false and to have been made by the applicant or any member or officer thereof knowing it to be false, and that in the circumstances of section 144 of the Broadcasting Act 1996, the provision of false information or the withholding of relevant information with the intention of misleading Ofcom could incur a criminal conviction and a disqualification from the holding of a licence.

216. MuxCo North Yorkshire Ltd is not aware of any issues which would prevent the award of a licence to the company.