



MuxCo Lincolnshire Limited

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

Part A – Public Section

January 2008

Executive summary

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

MuxCo Lincolnshire Ltd

1. MuxCo Lincolnshire Ltd (for ease of reference 'MuxCo Lincs') was created to establish local DAB digital radio in Lincolnshire in an efficient and cost effective manner, and to help enable Lincs FM Group to participate fully in DAB digital radio as both an owner and service provider within its home county.
2. The shareholders behind MuxCo Lincs are:
 - Lincs FM Group Ltd 51%
 - MuxCo Ltd 49%

Each has digital radio experience, through multiplex ownership and/or digital broadcasting. In addition, the MuxCo management team has considerable experience as a multiplex operator, having established and operated a network of 19 local radio multiplexes for GCap Media. It is currently initiating the creation of the MuxCo network, as well as managing UTV's multiplexes.

3. The ethos of the company is that digital radio should be available in a cost and operationally efficient manner to enable as many organisations as possible to broadcast. MuxCo Lincs will work hard to offer a wide range of broadcast options, such as programme choice, variable bit rates and hours of broadcast, to make DAB as economical as possible to potential service providers. We believe this is the best way to encourage more stations to join the platform and provide a compelling proposition for digital radio listeners.
4. The new multiplex provides an opportunity for smaller and more locally focused operators to increase revenue and to grow their businesses, by broadcasting to a wider area, through serving new audiences with new services and sharing in the benefits of multiplex ownership.
5. All existing analogue stations will be available on DAB from launch, ensuring a consistent DAB focused message is broadcast to all existing radio listeners and creating strong cross-promotional opportunities for radio's digital platform.

The Lincolnshire Marketplace

6. Lincolnshire's population profile is distinctly different to the rest of the UK. It is markedly older, with above average numbers of adults 45 plus. Conversely, under 45s are under represented, with 23% fewer 25 to 34 year olds living in the county compared to the UK average. The county also has a distinct C2DE bias.
7. Local commercial radio launched in Lincolnshire in 1992, and today only two local commercial services specifically serve the county. There are, though, a number of neighbouring services that attract an audience along the county's border.
8. In overall terms, commercial radio listening within the county is strong - ILR achieves a share of 32.9% (compared to the UK average of 31.9%), the result of two well focused local services. National commercial services, however, perform less well. The BBC's 55.9% share is only just ahead of its national average of 55.0%.

Our proposals

9. Our proposals to launch an efficient and cost effective multiplex are based on a thorough review of the market and the opportunities available. Our proactive involvement of shareholders, reasonable carriage costs, bitrate management policy and innovative Podcast Services provide an excellent opportunity for a range of organisations to broadcast radio services and we have already attracted (and will continue to attract) new operators to local radio in Lincolnshire.
10. Our focus is 'local, local, local'. We believe local radio has a strong commercial future – there will always be demand for local services that cater for local tastes and interests (geographic, demographic and community of interest focused) from both listeners and advertisers. It is important for the multiplex 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. Indeed, we believe a local focus will be the unique selling point that allows these services to compete with those operated by the larger radio groups.
11. Capacity has been allocated to accommodate all existing analogue services in stereo from launch. These services are listened to by 49% of the adult population each week, and collectively account for 30.6% of total radio listening.
 - Lincs FM 102.2
 - Compass FM
 - BBC Radio Lincolnshire
12. Spectrum has also been allocated to provide a range of new digital services that will broaden listener choice and expand the number of providers in the market. Individually and collectively, they cater for a wide range of tastes and interests. The following services are confirmed. Additional services will be launched during the licence term.
 - A service comprising music and listener-generated content for teenagers and young adults
 - An easy listening melodic music service
 - A country music service
 - A Christian music and speech service
 - A traffic and travel service
13. As well as these new radio services, MuxCo Lincs will carry a local Podcast Service providing opportunities for niche services to cater for a diversity of passions, interests and communities. Downloadable podcasts will include news from ITN, a local guide from Itchy, specialist music downloads from Channelfly, Asian programming from Sunrise and Sabras, as well as locally produced podcasts from Lincs FM and the Lincolnshire Echo and local community groups, including Siren FM.
14. The additional and complementary services that DAB can offer, such as EPG, music downloads, traffic and travel services, DABverts and slideshow, are important components in the next stage of DAB's development, and capacity has therefore been allocated for the provision of these services, with all radio services able to utilise DLS and EPG from launch.

Meeting the Award Criteria

Our proposed coverage and timetable to launch

15. Our proposals will deliver solid coverage of the major population centres from launch. Our proposed 4 transmitters will provide 'outdoor coverage' (e.g. to in-car and mobile receivers) to 92.9% of the adult population, and higher strength 'indoor coverage' (e.g. to kitchen radios) to 74.1% (noise limited).
16. It is our intention is to launch by July 2009.

Our ability to establish and maintain the service

17. The shareholders behind MuxCo Lincs have considerable analogue and digital radio experience. Lincs FM Group, which was established in 1991, operates 10 services across Lincolnshire and Yorkshire and has digital service provider experience on the Humberside and South Yorkshire multiplexes.
18. MuxCo is an ambitious and developing company with substantial digital radio experience and interests in a number of local multiplexes. Ofcom has described its management team (in the award of the North Yorkshire licence) as having "extensive experience in the management of local DAB multiplexes and the operation of digital radio services".
19. Both shareholders are committed to their digital futures and are well-resourced companies that can support the multiplex throughout the licence term.
20. Our chosen transmission provider, National Grid Wireless, has considerable experience in building and operating local, regional and national DAB multiplex networks on time and on budget.

Catering for local tastes and interests and broadening choice

21. We have undertaken a comprehensive programme of research to underpin our application. This has included population profiling and analysis of existing radio listening habits, as well as an independent and comprehensive survey of local tastes and interests. Together, this helps MuxCo Lincs ensure that the service we will provide will reflect and serve the various tastes, interests and demographics of the population.
22. Our research supports the simulcasting of local analogue services (helping promote digital radio and drive listeners from analogue to digital) as well as for our proposed new services. Taken as a whole, our proposed services will significantly broaden choice, complement existing services and cater for a wide range of local tastes and interests, with the complement of services providing something for all age groups, as well as more specialised communities of interest. Our research also underpins our audience projections and has provided information to forecast the potential share of digital listening.
23. Locally relevant content will be included in the simulcast services and in at least three digital only services.
24. Altogether, our proposals will provide further incentives for consumers to buy a DAB digital radio and will, we believe, help commercial radio grow further in the county.

Demonstrating local demand and support

25. RAJAR provides strong evidence of demand and interest in the simulcast services. Our commissioned consumer research supports this RAJAR analysis and enables us to measure local demand for our proposed digital only services. This research demonstrates strong interest in the complement of services proposed, which collectively appeal to 77% of the adult population.

Being fair and effective

26. 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.
27. We have engaged with potential service providers in an open and non-exclusive manner allowing operators to ensure a digital future, whoever is awarded the licence.

Summary

28. We believe that MuxCo Lincs will be the most credible operator for the multiplex.
 - We will deliver robust local DAB coverage across the county, as well as technical efficiencies, resulting in more economical multiplex carriage for service providers.
 - Our understanding of the market coupled with our comprehensive and specially commissioned research has helped ensure that our plans relate to the needs of local citizens and consumers. This will help ensure that MuxCo Lincs will deliver services that truly appeal to Lincolnshire and help commercial radio improve its market share. This information will also assist in the future development of the multiplex.
 - The multiplex is well resourced, in terms of both management and finance, and will be led by a management team with an unparalleled track record in applying for and successfully operating local multiplexes.
 - The shareholders have impressive track records in operating both local and digital-only stations. This expertise will be invaluable to the multiplex, as well as assisting the development of new programming streams.
 - The involvement of Lincs FM Group as a shareholder enables us to guarantee the carriage of Lincs FM 102.2 and Compass FM, as well as the provision of a new local digital only service - Lincs Country.
 - MuxCo Lincs will deliver a cost effective local DAB solution, collectively 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 Lincolnshire Ltd

Registered Number 06204592
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.

29. The transmission proposal is 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 also takes into account the footprints of existing and planned local multiplexes, the footprints of the existing analogue services and their spheres of influence.
30. In planning the proposed network, NGW has assumed the following service levels:
 - 58dBuV/m outdoor mobile.
 - 65dBuV/m indoor portable.
 - 76dBuV/m indoor handheld.
 - Where Interference Limited coverage is stated, this has been calculated using the interfering transmitter data and ERPs as stated in the Ofcom advertisement for the multiplex.
31. At launch, our proposals will provide outdoor coverage to 645,570 adults 15+ (equating to 92.9% of the licensed area), and indoor coverage to 514,848 adults (74.1%). To deliver this noise limited coverage, we propose to use four transmitters:

Belmont

A medium power transmitter using the existing National DAB antenna providing:

- Robust indoor coverage to most of Lincolnshire.
- Outdoor mobile coverage to much of the transport corridors including the A15, A16, A46, A57, A157 and A158.
- Mobile devices in a large proportion of key settlements.

High Hunsley

A medium power transmitter using a highly directional antenna to serve North West Lincolnshire and minimise overspill into Kingston-upon-Hull, providing:

- Robust indoor coverage to most of north west Lincolnshire including unserved parts of Scunthorpe and Gainsborough and the lower Trent estuary.
- Outdoor mobile coverage to much of the transport corridors including the A15, A18, A159, M180 and M181.
- Mobile devices in a large proportion of key settlements.
- This FM site is a defined RAL site, owned and operated by NGW as a National FM and DAB relay site.

Lincoln (County Hospital)

A low power transmitter utilising a directional antenna to provide:

- Robust indoor coverage in the central and south western parts of the city of Lincoln which are unable to obtain from Belmont due to “shadowing” from the nearby ridge.
- NGW has examined the use of the RAL site for this area but as a result of its use as an AM transmitter site in the river valley, NGW proposes the use of a higher site with better coverage - the non RAL site at Lincoln County Hospital. The ACI impact has been calculated as follows:

BBC Ch.12B - sixth channel adjacent
 Digital One Ch.11D - fourth channel adjacent
 4DG Ch.11A - adjacent channel no known information at time of writing

- At 100w ERP, at worst case NGW calculates 1,400 houses would be affected. This is expected to fall significantly once a full evaluation has been undertaken. However, it is our view that the importance of Lincoln calls for a RAL site to serve the city. If successful in this application we will be seeking agreement for this. In the meantime, we have written to the other multiplex operators seeking their views.

Grantham

A low power transmitter utilising a directional antenna to provide:

- Robust indoor coverage in the town of Grantham, which otherwise falls just outside the coverage of Belmont and would have little or no service.
- This FM site is a defined RAL site, owned and operated by NGW as a National FM relay site. We propose to operate this site above the RAL power of 400w at 17m. As with Lincoln (County Hospital), initial analysis has been undertaken and with a 400w ERP, at the worst case, 781 houses are affected. This is expected to fall significantly once a full evaluation has been undertaken.

32. Ofcom’s advertisement identifies a potential adult 15+ population of 670,376. NGW calculates a potential adult 15+ population of 694,500 within the PPA, and percentage coverages are based on the NGW population. Coverage using the 4 transmitters is forecast as:

	Outdoor Coverage (58 dB)		Indoor Coverage (65 dB)	
	Adults '000	% Covered	Adults '000	% Covered
Noise Limited	645,570	92.9%	514,848	74.1%
Interference Limited	538,938	77.6%	477,557	68.8%

33. Currently MuxCo Lincs is not proposing to implement any further transmitters. However, we recognise that over time further development may be expedient, such as to cover Boston, the North Fens and the southern part of the East Lindsey District.

Standalone Coverage

34. 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
Belmont	416,813	60.0%	347,900	50.1%
Lincoln (County Hospital)	93,419	13.5%	85,138	12.3%
High Hunsley	58,443	8.4%	33,076	4.8%
Grantham	36,899	5.3%	35,611	5.1%

Cumulative Coverage

35. 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
Belmont	416,813	60.0%	347,900	50.1%
Lincoln (County Hospital)	467,201	69.3%	401,596	57.8%
High Hunsley	500,156	72.0%	439,805	63.3%
Grantham	538,938	77.6%	477,557	68.8%

Network Resilience

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

Transmitter Site	Cumulative Population Loss: Outdoor	Percentage Lost	Cumulative Population Loss: Indoor	Percentage Lost
Loss of Belmont	348,460	50.2%	322,920	46.5%
Loss of High Hunsley	32,535	4.7%	38,297	5.5%
Loss of Lincoln (County Hospital)	50,839	7.3%	53,929	7.8%
Loss of Grantham	38,782	5.6%	37,752	5.5%

Proposed Network - Power Enhancement

37. It is proposed that at a future date (subject to financial and editorial considerations) and in agreement with Ofcom and other multiplex owners, to seek a power increase at any or all of the sites. If this was to proceed, then further studies would be undertaken with respect to Adjacent Channel Interference in accordance with the Memorandum of Understanding.

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.

38. We believe that the earliest launch of the multiplex brings the greatest possible advantage to the development of the digital radio audience in Lincolnshire. We therefore propose to launch by July 2009 with all 4 transmitters.
39. We are aware that DSO work is planned for Belmont during 2009. Our proposed use of the NGW national DAB antenna minimises construction constraints on the DSO programme and means that we potentially could be ready for an April 2009 launch. Nearer the time, when the impact of DSO in terms of power reductions, and certainty of dates is clearer, we would discuss with Ofcom the best time to bring this licence on air.
40. Subject to above we have made contingent arrangements with NGW to ensure that this launch date can be achieved. In making this assertion we have assumed the multiplex licence would be awarded by May 2008.
41. We have identified additional areas for potential network enhancement in the future. At present, no transmitters are planned and no dates proposed when any enhancement 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

42. NGW will be the owner of all the required antenna systems. Discussions on all the antenna systems have taken place between NGW and NGW Network Access, and we are advised that no obstacles are expected to meeting the timetable for launch other than the impact of DSO discussed above.

Transmitter systems

43. NGW propose to use transmitters from a major European supplier, 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

44. 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

45. NGW Network Access have confirmed that it can provide suitable accommodation and power supply at two of the sites and at the remaining two launch sites, NGW has also negotiated new accommodation and power supply agreements with Arqiva Network Access (Belmont is an Arqiva Site, but NGW manage the Antenna and the equipment would be housed in the NGW area).

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.

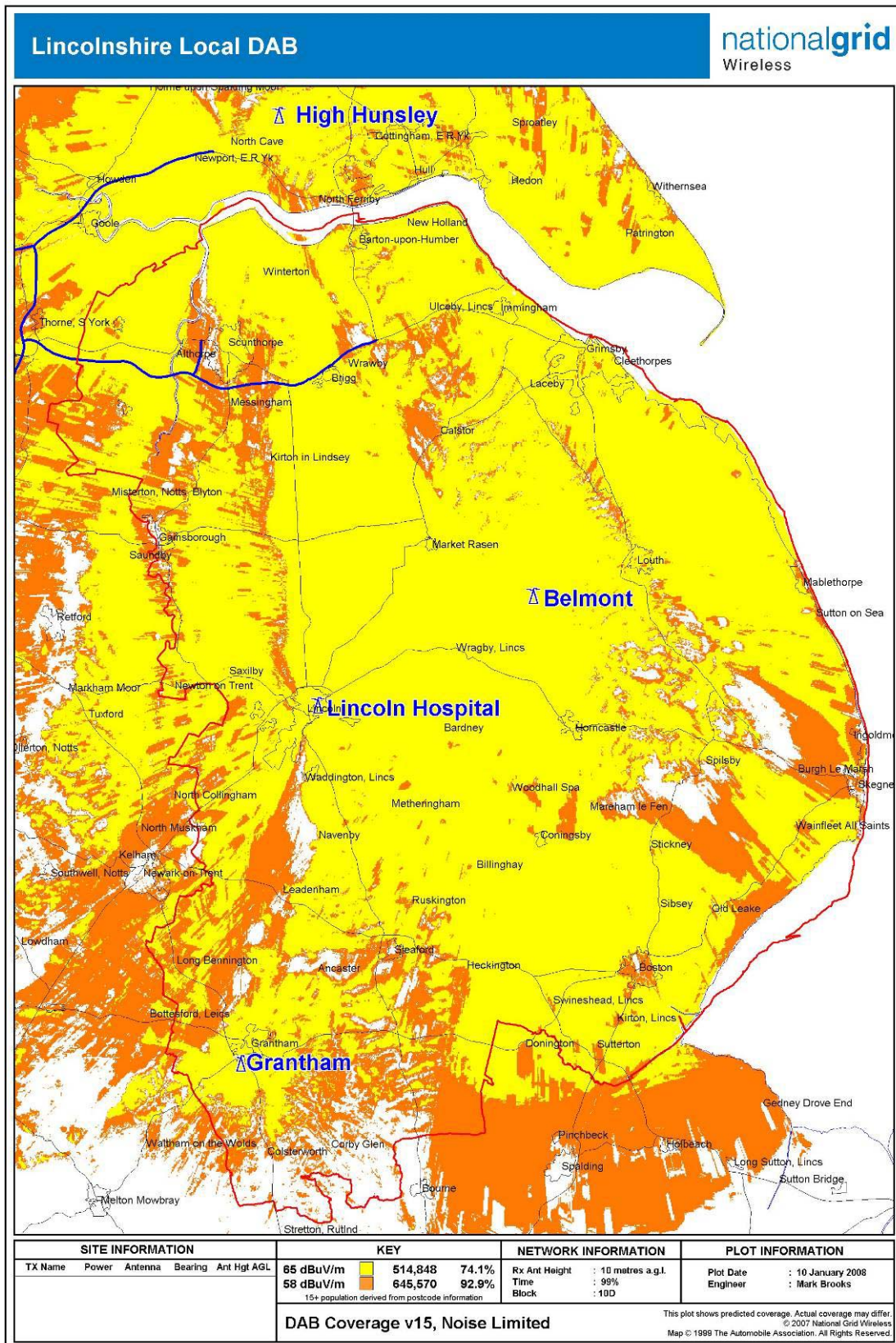
46. The assignment details accompanying this application are provided under separate cover as an electronic text file.

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.

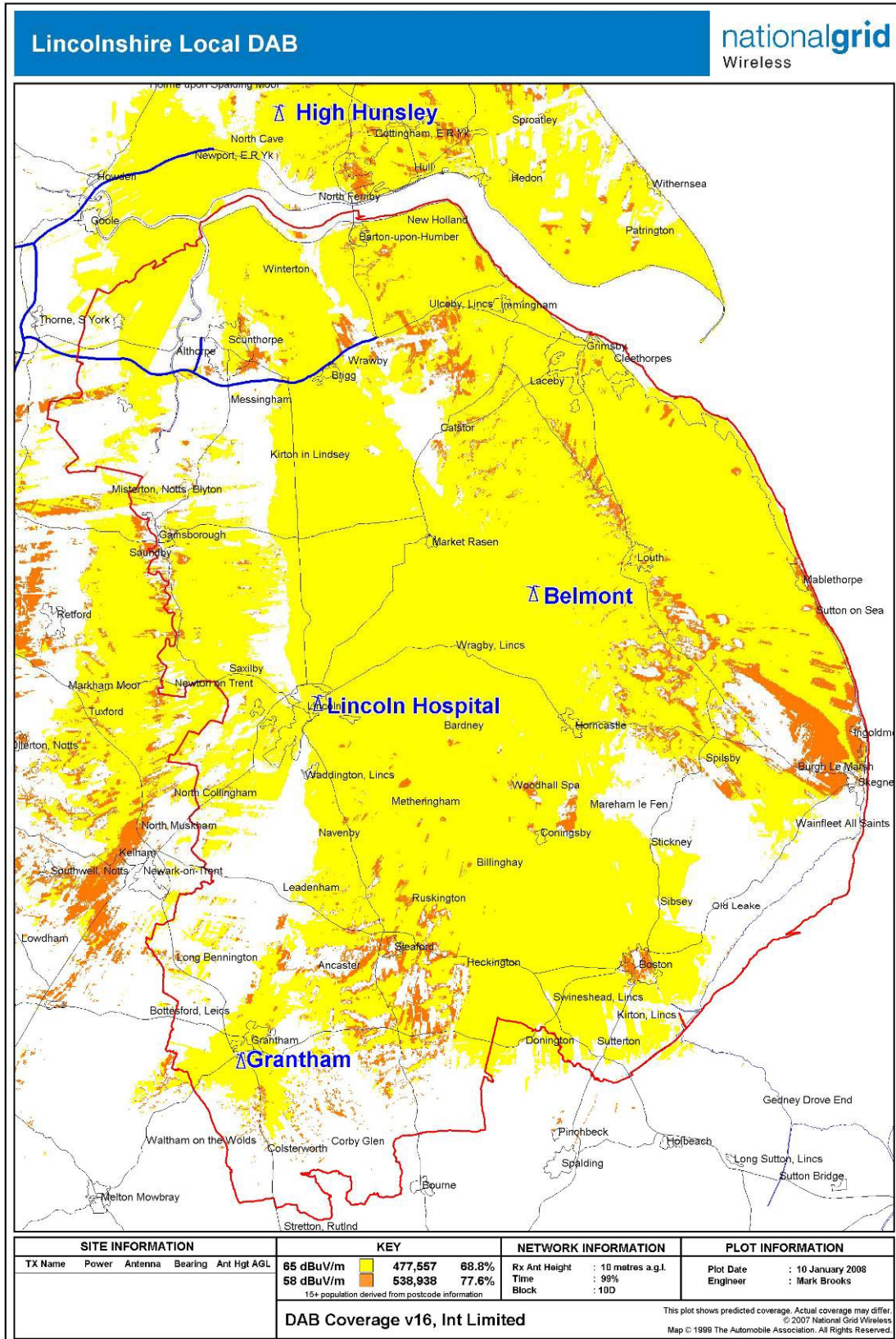
Site Name	NGR	Date of Implementation (see note below)	Owner/lessor of aperture space on mast/tower	Antenna height (metres)	Notes
Belmont	TF 218 836	July 2009 *	NGW	291m	NGW Network Access have offered a share of the existing National Digital Radio Antenna.
Lincoln (County Hospital)	SK 987 719	July 2009 *	Lincoln & Louth NHS Trust	55 m	NGW is in the process of negotiating terms for the use of this site. It is proposed to install 2 tiers of new Carioid antennas at this site.
High Hunsley	SE 946 350	July 2009 *	NGW	30m	NGW has an offer from NGW Network Access to install 2 tiers of new yagi antennas at this site.
Grantham	SK 905 336	July 2009 *	NGW	17m	NGW has an offer from NGW Network Access to install new colinear antenna at this site.

Note - * MuxCo Lincs will aim to be ready to launch by April 2009.

47. The following map highlights proposed noise limited coverage at launch.



48. The following map highlights proposed interference limited coverage at launch.



- 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.

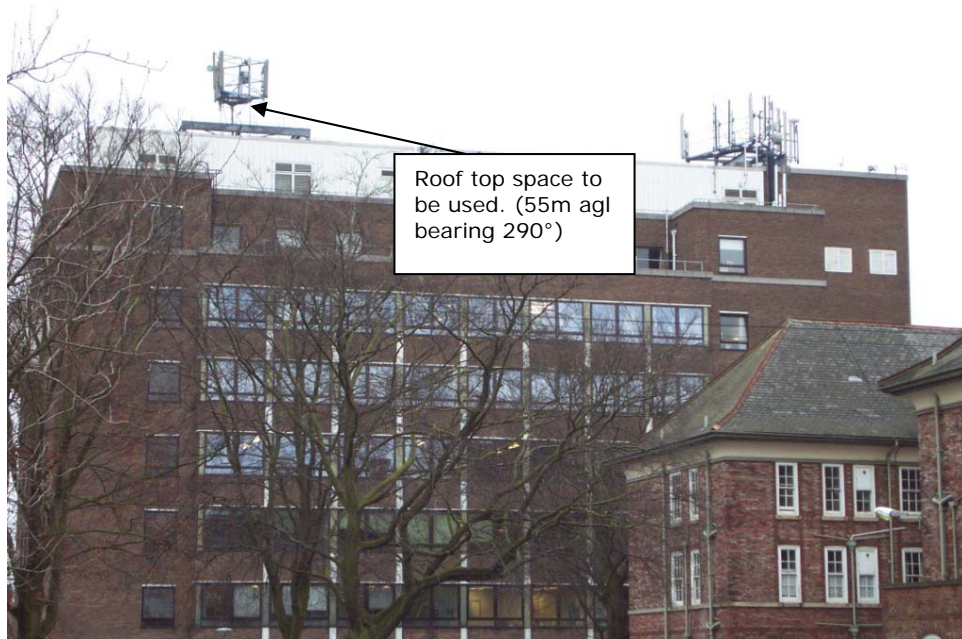
i) Diagrams

49. The following diagrams detail the proposed antennas at the following transmitter sites. Existing antennas are not shown.

High Hunsley



Lincoln County Hospital proposed DAB antenna sketch.



Site under negotiation antenna to be affixed to head-frame or self supporting structure

Grantham



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

50. The Network Access supplier has confirmed that the designs of the existing and new 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 the Network Access supplier has confirmed that it will undertake these.

Site Name	Antenna System	Antenna Height (m)	Antenna Owner Permission	Accommodation Permission	Power Supply	Impacted By DSO
Belmont	Existing Digital Radio Antenna	291m	NGW Network Access	NGW Network Access is providing accommodation in the existing NGW Area.	To be provided by NGW Network Access	See Note 1
Lincoln (County Hospital)	New 2 tier Cardioid Antenna	55m	Lincoln & Louth NHS Trust	NGW Network Access are providing new accommodation	To be provided by NGW Network Access	No UHF TV on site
High Hunsley	New 2 tier Yagi Antenna	30m	NGW Network Access	NGW Network Access are providing new accommodation	To be provided by NGW Network Access	No UHF TV on site
Grantham	New 1 tier Colinear Antenna	17m	NGW Network Access	NGW Network Access are providing new accommodation	To be provided by NGW Network Access	No UHF TV on site

Note 1

The DSO (Digital Switch Over) programme impacts heavily on Belmont such that there are no options for erecting dedicated DAB antennas until after the DSO project is complete and temporary DTT antennas are removed. It is therefore proposed to utilise the national DAB antenna which is integrated into the national FM antenna. This antenna is not being relocated during DSO although there are likely to be a small number of periods when reduced power working is employed to allow DTT antennas to be rigged adjacent to this antenna.

d) Provide the following details regarding transmission arrangements:

i) Any transmission contracts that have been agreed

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

ii) The status of these agreements

52. 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.

53. 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).

54. It is envisaged that all services will broadcast from the start of the multiplex licence period.

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.

55. 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.

56. There are no plans to appoint any further directors.

Michael Betton

Occupation:
Chief Executive, Lincs FM Group

Other directorships:
Arun FM Ltd (formerly Southdown FM Ltd), Commercial Radio Pension Trustees Ltd, Commercial Radio Companies Association Ltd, Compass Radio Ltd, Cornwall Local Radio Ltd, Dearne FM Ltd, Fosseway Radio Ltd, Jet FM Ltd, Jupiter Radio Ltd, Lincs FM 102.2 Ltd, Lincs FM Group Ltd (formerly Lincs FM plc), Orion FM Ltd, RadioCentre Ltd, Radio Production Services Ltd, Ridings FM Ltd, Rother FM Ltd, Route FM Radio Ltd, Rutland Radio Ltd, Trax FM Ltd, White Rose Radio Ltd (formerly LFM Ltd)

Other Media Interests:
None

Michael is one of the longest serving and most respected Chief Executives in commercial radio. He started his radio career with Radio Orwell in Ipswich, moving to be the launch programme controller of Ocean Sound in 1986, before becoming its managing director in 1990.

He founded Lincs FM in 1991 to apply for the newly advertised Lincolnshire licence and launched the station in 1992. Since then Lincs FM has gone on to great success, both in audience and commercial terms, while remaining true to its original programming proposals. In all, the Group now holds ten local commercial radio licences and has developed into a group of successful radio stations, all sharing a strong commitment to providing high quality, truly local radio. Many of the group's stations have won or been nominated for major industry awards.

Michael has been a board member of the RadioCentre (and before that the CRCA) since 1992 and is chairman of the Commercial Radio Pension Trustees. He has never shied away from voicing the concerns of smaller groups and stations. He has been a Sony Radio Academy Awards judge and a member of the Sony Awards organising committee.

Michael has lived in Lincolnshire for 23 years, he and his family are deeply committed to the area. He has a unique understanding of the area's radio tastes.

Nick Rawlins

Occupation:
Director of Finance and Company Secretary of Lincs FM Group

Other directorships:
Fosseway Radio Ltd, Radio Production Services Ltd, Trax FM Ltd

Other Media Interests:
None

Nick is the Director of Finance and Company Secretary of Lincs FM Group. He joined the company in December 1992, nine months after Lincs FM 102.2 started to broadcast.

Nick started his accountancy career working for a small firm of auditors in North West London becoming Office Manager before moving to Lincoln working for a large local practice. For two years before joining Lincs FM he worked as a management consultant, dealing with aspects as varied as raising finance through to implementing financial and IT systems.

Nick is a member of the Institute of Financial Accountants and is a past district chairman. He has lived in the county since 1984 and has an exceptional understanding of the financial dynamics behind the successful operation of small and medium scale commercial local radio.

Gregory Watson

Occupation:
Managing Director, MuxCo Ltd

Other directorships:
Reception Media Ltd, Folder Media Ltd, MuxCo Ltd, MuxCo North Yorkshire Ltd, MuxCo Northeast Wales & West Cheshire Ltd, MuxCo Hereford & Worcester Ltd, MuxCo Gloucestershire Ltd, MuxCo Wales Ltd, Radio Academy, Radio Academy Trading Ltd, Children's Radio UK Ltd, Children's Radio UK (London) 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, and to create MuxCo.

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. In 2007 Gregory was appointed a Public Member of Network Rail.

Deanna Hallett

Occupation:
Managing Director, Hallett Arendt

Directorships:
Hallett Arendt Ltd, Folder Media Ltd, MuxCo Ltd, MuxCo North Yorkshire Ltd, MuxCo Northeast Wales & West Cheshire Ltd, MuxCo Hereford & Worcester Ltd, MuxCo Gloucestershire Ltd

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

Deanna 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 RAJAR research committee since its inauguration.

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 the MuxCo network by offering training, research and marketing advice to service providers in help them maximise audiences and revenue.

(b) Proposed Investors and Shareholding Structure

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

iii) Names and addresses of all existing or proposed shareholders.

Shareholder	Shares	% Shareholding	% Loan stock
Lincs FM Group Ltd Witham Park Waterside South Lincoln LN5 7JN	20,400	51%	51%
MuxCo Ltd 96a Curtain Road London EC2A 3AA	19,600	49%	49%

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

57. 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.

58. See above.

vi) Outline any shareholders agreements or arrangements which exist.

59. A shareholders agreement will be entered into after the award of the licence. The shareholders have agreed terms which cover key issues of governance relating to the company including shareholdings, board composition, funding, pre-emption and confidentiality.

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.

60. Not applicable.

viii) Ofcom may request additional information regarding the shareholders, or any other providers of finance, listed in the application.

61. 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

Lincs FM Group Ltd

Lincs FM has interests in the following licences:

- Lincs FM 102.2
- Compass FM
- Dearne FM
- Fosseyway Radio
- Oak FM
- Ridings FM
- Rother FM
- Rutland Radio
- Trax FM (Bassetlaw)
- Trax FM (Doncaster)

MuxCo Ltd

MuxCo has interests in the following companies:

- MuxCo Hereford & Worcester Ltd (33.3%)
- MuxCo North Yorkshire Ltd (40%)
- MuxCo Northeast Wales and West Cheshire Ltd (25%)
- MuxCo Gloucestershire Ltd (25%)

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 Lincolnshire

62. The strategy for MuxCo Lincs is:

- To establish an efficient and progressive business that minimises the financial burden on operators to broadcast on DAB
- To provide opportunities for existing analogue services to simulcast on DAB
- To create an environment that encourages businesses, both new and existing, local and national, to provide services on local digital radio that will broaden choice and provide new commercial opportunities
- To re-emphasise local radio as an important part of radio's digital future
- As part of the MuxCo Network, to share best practice and future opportunities
- To provide a good return on investment to shareholders

The Shareholders and their Digital Strategies

63. **Lincs FM Group Ltd** owns and operates 10 analogue radio stations across Lincolnshire and the North East, a number of which simulcast on local DAB multiplexes. The Group was formed in 1991 to apply for the local radio licence for Lincolnshire, the first licence to be competitively advertised by the Radio Authority. Whilst most commercial radio companies have grown by acquisition, Lincs FM Group has grown primarily by winning licences by competitive award. The group has been awarded 9 local licences, and only undertook its first acquisition in 2007, acquiring Loughborough's Oak FM. Lincs FM Group has built its business on its commitment to distinctive and high-quality local radio, and on its strategy of expanding organically by applying for new licences in areas that make commercial sense to the Group. Lincs FM 102.2, which launched in March 1992, has long sustained some of the country's best RAJAR figures as well as twice being nominated as Sony Station of the Year. The Group has since won many major industry awards. Whilst the Group has been involved in DAB for several years as a service provider, the Lincolnshire multiplex provides an opportunity for involvement as an owner. As such, it also provides the correct environment for the Group to ensure that more of its stations have a future in the digital landscape, as well as to develop and provide new services that complement the existing services it provides in the county. Lincs FM Group also recognise that with additional costs incurred through duplication of transmission, this needs to be achieved in a cost efficient manner. It believes the MuxCo concept, of shared ownership and efficient planning, is such a model.



64. **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. The team established and operated the NOWdigital network for GCap Media, and has 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). The Folder Media management team are currently managing UTV's multiplex network, as well as overseeing the launch of MuxCo's new multiplexes. MuxCo's strategy is to build a network of local multiplexes in association with local partners in each area, to ensure opportunities exist for all analogue operators to broadcast on DAB. Working with local partners helps encourage and make them more confident to take a more active role in digital radio, as part of the multiplex as well as being a service provider. Under this model, partners receive financial benefits of ownership which helps reduce their net cost of investment in DAB. 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. Further information on MuxCo is provided in Part D.



The Business Plan and its Objectives

65. MuxCo Lincs has established a business model that will drive the company to provide a premium digital radio service. Its key objectives are:
- To operate a multiplex that offers a wide choice of live and on-demand programme services which address local tastes and interests, broaden choice and increase plurality.
 - 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.
 - To operate in a manner ensuring fair and effective competition.
 - To operate a sound financial business, with confirmed service providers helping to demonstrate viability.
 - To ensure that digital radio is successfully established.
66. The shareholders are satisfied that MuxCo Lincs is well resourced technically as well as financially to support the needs of the service providers.
67. The following chart summarises the reporting structure of the company.



68. The Board, which will meet at least quarterly, has the following responsibilities:

- 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
- Regulatory compliance

69. Folder Media will provide multiplex management services. Folder Media has unparalleled experience in the day-to-day management of successful local multiplexes. It is currently managing UTV's local multiplex network, as well as the launch of multiplexes in Wrexham & Chester, Hereford & Worcestershire and North Yorkshire. It will ensure that changes and any requirements from the service providers can be enacted in a timely and cost-effective manner, and will ensure that the multiplex is responsive to the changing radio marketplace.

(i) The network construction phase

70. There are three stages to the network construction phase – planning, building and testing. MuxCo Lincs will contract with NGW to provide a transmission solution, who on the basis of this commitment will fund the capital expenditure and installation of the infrastructure.

71. **Planning** – the design of our transmission plan has taken into account the requirements of service providers, including the BBC, to ensure that key population centres and major roads are well covered, and local geographical issues are taken into account. A number of iterations have been produced before settling on a commercially prudent 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 Lincs.

72. **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

73. 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 DSP 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

74. As multiplex manager, Folder Media will be responsible to the MuxCo Lincs 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 provision, 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.
75. 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 Lincs 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.
76. Folder Media will provide ongoing management cover for the multiplex, including purchase and sales ledgers, IT, secretarial, legal, research, marketing co-ordination and technical support.
77. 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 Lincs and service providers, will be to help educate and inform listeners, advertisers and equipment retailers.

(iv) Marketing

78. There is still a significant DAB marketing campaign that needs to be undertaken on both a national and local level. 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 also propose to co-ordinate our local marketing activity with 4 Digital Group. We also believe that the planned analogue TV switch off will assist the case for DAB digital radio.
79. The key objectives of our 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
80. We will work closely with our service providers to help co-ordinate locally focused marketing of digital radio generically, as well as of the services on the multiplex, with advice provided where relevant by Folder Media.

81. Service providers are likely to undertake their own brand marketing highlighting their appearance on DAB. We will work with service providers, particularly local analogue operators, to use their airtime to promote DAB digital radio in a consistent manner across all MuxCo partner stations.
82. 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.
83. We believe that for listeners, the identity of the multiplex owner 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
Total	£80,000

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

84. Letters of investment are provided in Part B.

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

85. The accounts for the shareholders will be provided to Ofcom under separate cover. MuxCo Ltd is a new company and details of its shareholders and funding commitment is provided in Part D.

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.

86. 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.

87. 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

88. The projected adult population of the multiplex TSA for the purpose of the application has been assumed at 826,000. We are aware that service providers may elect alternative TSAs for RAJAR research purposes.

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

89. The following table summarises our audience projections for simulcast and digital only services.

	Year 1	Year 2	Year 3	Year 4
Lincs FM				
• Weekly Reach %	36.4%	36.3%	36.1%	36.1%
• Ave Hours	12.5	12.5	12.0	12.0
• Total Hours '000s	3,758	3,748	3,578	3,578
• Digital Hours '000s	281	452	551	667
Compass FM				
• Weekly Reach %	4.7%	4.8%	4.8%	4.8%
• Ave Hours	10.5	10.5	10.5	10.5
• Total Hours '000s	408	416	416	416
• Digital Hours '000s	54	79	89	99
Lincs Country				
• Weekly Reach %	2.0%	2.5%	2.9%	3.0%
• Ave Hours	4.1	4.5	4.7	5.0
• Total (& Digital) Hours '000s	67	94	111	125
Shuffle				
• Weekly Reach %	2.3%	2.7%	3.0%	3.2%
• Ave Hours	4.0	4.5	4.7	4.9
• Total (& Digital) Hours '000s	76	99	116	130
Easy Radio				
• Weekly Reach %	2.4%	2.7%	2.9%	3.0%
• Ave Hours	4.0	4.5	4.7	4.9
• Total (& Digital) Hours '000s	79	100	113	121
UCB				
• Weekly Reach %	1.3%	1.6%	1.8%	2.0%
• Ave Hours	4.2	4.4	4.7	5.0
• Total (& Digital) Hours '000s	46	58	68	82
Traffic				
• Weekly Reach %	3.0%	3.0%	3.0%	3.0%
• Ave Hours	3.0	3.0	3.0	3.0
• Total (& Digital) Hours '000s	73	73	73	73

- 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	826	826	826	826
All radio hours '000s	18,104	18,005	17,906	17,906
All digital radio hours '000s	4,224	5,702	6,410	7,106
All digital hours as % of all radio hours	23.3%	31.7%	35.8%	39.7%
MuxCo Lincs digital hours '000s	676	955	1,122	1,297
MuxCo Lincs digital hours as % of all radio hours	3.7%	5.3%	6.3%	7.2%

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

Audience projections for programme services

90. In estimating audiences, we have based our assumptions on RAJAR within the Lincs FM solus area (which includes Compass FM but excludes Rutland Radio). This area covers a population of some 826,000 adults (RAJAR Q3 2007). An alternative TSA would have been BBC Radio Lincolnshire which covers a smaller 519,000 adults, principally by not covering Grimsby. We choose to use the Lincs FM TSA over the BBC as, whilst larger than both the advertised population of the multiplex area (670,000) and the BBC, we believe that it to be more representative of the multiplex for the purpose of the application.

Projections for the total weekly number of listening hours

91. Projections for existing services are based on their current RAJAR performance, and for the proposed new services on our consumer research.
92. 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

93. RAJAR has been reviewed using rolled 12 month data over the three years to Q3 2007. During this period, the TSA population has grown by 8.84%, with Lincolnshire as a whole increasing by 11% (one of the largest increases in the country). The population is forecast to grow by a further 10% by 2014 (compared to 4% across England). We note that as well as increasing in number, the county's population is also getting older. For the purposes of our calculations, we have prudently held the population as a constant for the first four years of the licence period.

Total Radio Listening

94. In the 12 month period to Q3 2007, 90.3% of Lincolnshire's adults listened to at least one radio service on average for 24.4 hours, delivering total radio listening hours of 18,157,000.
95. Whilst the absolute number of listeners has increased by 5.97% since 2005, we believe that this is a reflection of the growing population. In real terms, all radio weekly reach has fallen from 92.8% in the year ending Q3 2005 to 90.3% in the year ending Q3 2007. Total hours of listening have also declined, down from 18.3m in 2005 to 18.2m in 2007, with average hours down from 26.0.
96. Whilst this 'all radio' performance currently places Lincolnshire in a slightly more positive position than the UK as a whole in relation to both weekly radio listening penetration and average time spent listening, the county's decline since 2005 is higher than the average for the UK, suggesting that greater choice in other markets in the UK is helping to stem audience losses to radio as a whole.
97. Whilst we believe that increased radio choice will help stimulate the total market, either by attracting lapsed radio listeners or increasing time spent listening, a view confirmed by our consumer research, we believe it prudent to forecast some decline both in the penetration of all radio and total hours delivered, to counter the growth of any new non-radio mobile devices that may be released. Competition from a wide range of new media, ranging from more TV choice, mobile phone and the internet will 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	826	826	826	826
Reach %	90.2	90.1	90.0	90.0
Reach '000s	745	744	743	743
Total Hours '000s	18,104	18,005	17,906	17,906
Ave. Hours	24.3	24.2	24.1	24.1

Digital Share of Listening

98. 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.
99. Our forecasts are based on the DRDB's 5 year forecast, which we have up-weighted using the 2007 penetration data, and then carried forward the forecast growth on the basis of this new base.

100. We are comfortable with the DRDB forecasts:
- The latest sales data from the DRDB state that 6.45m DAB sets had been sold by the end of December 2007.
 - 22% of the adult population live in a DAB household (source RAJAR Q3 2007)
 - RAJAR Q3 2007 highlights that 28.4% of adults have listened to a digital service on any of the available platforms.
101. Our consumer research highlighted that in Lincolnshire 27% already own a DAB digital radio and a further 6% can access a DAB radio.
- There does not appear to be a significant difference by age in the penetration of ownership, although under 35s were more likely to say they could access DAB.
 - Ownership and access only levels were found to be significantly higher in the ABC1 social class groups.
 - It was also higher amongst BBC listeners
102. Our long-term digital listening forecasts uses industry data, as well as work undertaken by NGW, whose forecasts for digital share of listening have been used as the starting point for calculating digital listening.

The relative market shares of the radio sectors

103. 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.
104. 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 Lincs and the new national multiplex) and 2013. This analysis enabled us to establish a view on the overall radio market within Lincolnshire and the changes that each sector would experience. The detailed workings behind these numbers are provided in Part B.

	Analogue Stations 2008	Digital Stations 2008	Total Stations 2010	Relative share 2008	Relative share 2010	Relative share 2013
BBC Network	5	7	11	46.6%	44.0%	41.9%
BBC Local	1	0	1	9.4%	9.2%	8.9%
INRs	3	2	18	7.4%	9.5%	12.5%
ILR Lincolnshire	2	0	8	19.9%	22.2%	21.8%
Other Multiplexes	4	12	16	13.7%	12.4%	12.8%
Other	-	-	-	2.9%	2.7%	2.1%
Total	15	21	54	100.0%	100.0%	100.0%

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/>.

105. MuxCo Lincs will carry the existing commercial analogue services of Lincs FM 102.2 and Compass FM. Together, these services are listened to by just over 37.2% of all adults (307,000), and represent 23.2% of total radio listening. Their RAJAR audience results demonstrate their popularity.
106. Capacity has also been reserved for BBC Radio Lincolnshire. The inclusion of the local BBC service raises net reach to 48.9% and share to 30.6%
107. Capacity has also been allocated for five digital only services. Our local research demonstrates that these services cater for demanded local tastes and interests.
 - An easy listening melodic music service - *Easy Radio*
 - A country music service – *Lincs Country*
 - A service comprising music and listener generated content for teenagers and young adults - *Shuffle*
 - A Christian music and speech service - *UCB UK*
 - A traffic and travel service - *Traffic Radio*
108. Capacity has also been allocated for a Podcast Channel, which will provide opportunities for niche services to provide downloadable content offering a range of programming which will be targeted at specific interest groups.

Lincs FM 102.2

Format	Full Service
Licence Description	A simulcast of Lincs FM (Ofcom Licence number AL132), a classic hits and adult contemporary music service playing music from the 1960s to the present day.
Local Content	Lincs FM is locally produced 24 hours a day. Local news and information relevant to its Lincolnshire audience is provided during daytime.
Music to Speech	Minimum 75% music and 15% speech
Hours of Broadcast	24



Compass FM

Format	Full Service
Licence Description	A simulcast of Compass FM (Ofcom Licence number AL266), a classic oldies and melodic pop service for Grimsby, Cleethorpes and Immingham.
Local Content	Compass FM is locally produced between 5am and midnight. Local news and information, focusing on Grimsby, Cleethorpes and Immingham is provided during daytime.
Music to Speech	Minimum 75% music and 15% speech
Hours of Broadcast	24



Lincs Country

Format	Country
Licence Description	A mix of new, old and crossover country music which will be accessible, melodic and hook driven.
Local Content	Local news and information to match musical content.
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, including soft rock, country, folk and blues.
Local Content	A network service offering a broadening of music 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



Shuffle

Format	Youth
Licence Description	A music station comprising listener-generated content and chart, dance and rock tracks, and focusing on the tastes and interests of under 35 year olds.
Local Content	Shuffle will reflect the trends of young people in Lincolnshire. It is a music intensive service, with programmes and features created by local listeners. Speech will include information of relevance to the target audience.
Music to Speech	Minimum 90% music and 5% speech
Hours of Broadcast	24



UCB UK

Format	Religious
Licence Description	A service providing contemporary Christian music and classic favourites, together with spoken features including news, Christian teaching and short features offering a Christian perspective on today's lifestyle.
Local Content	A network service broadening music and speech choice. There are currently no plans to introduce local content on this service.
Music to Speech	Minimum 60% music and 25% 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.
Music to Speech	100% speech
Hours of Broadcast	24



Podcast Service

Format	Varied
Licence Description	A wide selection of speech and music podcasts provided by a range of companies.
Local Content	Podcasts will include material of a local nature.
Music to Speech	Minimum 5% music and 5% speech
Hours of Broadcast	24



Further information on the Podcast Service

109. The Podcast Service will provide an opportunity for those who have an interest to broadcast on the multiplex, but who are not yet in a position to finance a full service or who are currently unable to demonstrate a substantial listener base, to take an active role. In addition, there are providers 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.
110. We have had discussions with 4 Digital Group and other industry colleagues to align our podcast delivery system to ensure compatibility for listeners. We have also spoken with set manufacturers to ensure that new receivers are able to decode and store this material.
111. In our research, 19% of respondents and 36% of under 25s were interested in being able to download new specialist music and / or speech programmes. Our research also highlights that the public are keen to experience downloadable material on a variety of different subjects. The Podcast Service will therefore carry content that reflects many of these interests and will complement the proposed range of live audio services.
112. 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 that certain material, in particular speech content, is best delivered in an on-demand style, where the lower cost base for production and transmission makes material easier and cheaper to distribute to local listeners.
113. 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', who produce Itchy Guides for major centres across the UK, will provide a dedicated guide for Lincolnshire.

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 ('The Barfly'). Already a podcast producer, 'The Fly Podcast' will bring a unique new and live 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

- Passion for the Planet are keen to expand their world music and environmental issues service but need to do at so an appropriate and economical rate. Their podcast will include best of material from their existing service with local features of interest to Lincolnshire residents.
- 'Sabras Radio' are keen to develop a localised podcast for Lincolnshire's Asian population.
- 'Sunrise is 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.

Local content

We believe that digital radio should be open to as many broadcasters as possible. There are already many local podcasters in Lincolnshire and DAB offers them a new outlet for their locally specific material. We have spoken with a number of local groups and organisations who want to take part in the project. We will actively seek other local Podcast service providers, but so far we have indications of interest from:

- Lincs FM, who currently produce podcast material, and wish to produce, amongst others, an extended version of its farming news and information.
- The Lincolnshire Echo, who produce a weekly sports podcast and is keen to expand the distribution of the content.
- Local community station Siren FM, who plan to produce podcast material for a variety of its programmes that it would like to broadcast to more people through the multiplex.
- Tulip FM, the local community group for South Holland
- Gravity, the local community group for Grantham

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?

Lincs FM 102.2	
Target Audience & Demographic Profile	<ul style="list-style-type: none"> • 300,000 adults (36.4% of all adults) listen to Lincs FM each week, making it the leading commercial service in the TSA. • The station has a broad appeal and is particularly popular with 35 to 54 year olds who account for just over 44% of the audience. • It has an almost equal appeal among men and women. • Lincs FM delivers a strong C2DE profile, which is in keeping with the population profile.
Local Tastes & Interests	<p>As Lincolnshire's heritage local commercial service, many tune into Lincs 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.</p> <p>Local programming is broadcast at all times, except for a weekly chart programme and the occasional syndicated special.</p> <p>Local news bulletins are broadcast between 6am and midnight (7am and 4pm weekends). Bulletins contain local and national stories, sport, weather and entertainment news.</p>
Summary	<p>Lincs FM appeals to those with an interest in contemporary hit radio. It is increasingly the most popular local service across the county, providing entertainment as well as local news and information.</p> <p>Our research highlights that existing ILR listeners have above interest in DAB functionality, in particular being able to pause, rewind and record programmes, visual enhancements through a colour screen, music downloads and 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, Lincs FM will play an important role in the promotion of digital radio. In addition, as an existing service, Lincs FM is able to enhance its digital proposition with specific DAB only content.</p> <ul style="list-style-type: none"> • Existing heritage service • Strong 35 to 54 age profile • Broad appeal • Promoter of DAB and encourages trial

Compass FM	
Target Audience & Demographic Profile	<ul style="list-style-type: none"> • 39,000 adults (4.7%) listen to Compass FM each week (equal to a reach of 27.7% within its analogue TSA). • The station has a particular appeal with 45 pluses, a demographic that accounts for 62.2% of all listeners. • Comparatively evenly matched by sex, it has a slight male bias in contrast to the population profile. • Compass FM is markedly C2DE (71.5%); reflecting its older audience.
Local Tastes & Interests	<p>Compass FM is the local full service for North East Lincolnshire including Grimsby, Cleethorpes and Immingham. As such, many listen for its local news, travel and information features, as well as its broad music repertoire targeted at a 30 plus audience. Its strength as a local service is evident through RAJAR.</p> <p>Local programming is broadcast at all times except for a weekly chart programme and the occasional syndicated special. Local news bulletins are broadcast between 7am and 8pm (8am and 1pm at weekends). Bulletins contain local and national stories, sport, weather and entertainment news.</p>
Summary	<p>Compass FM will benefit from the transition to DAB, being able to maintain listenership amongst its audience across the county.</p> <p>As previously stated, ILR listeners have a high interest in DAB functionality. MuxCo's commitment to provide functionality to enable slideshow, music downloads and red button functionality will help both DAB and services such as Compass FM.</p> <ul style="list-style-type: none"> • Existing heritage service • 45 plus age profile • Male bias • Promoter of DAB and encourages trial

Lincs Country	
Target Audience & Demographic Profile	<ul style="list-style-type: none"> • The service will appeal principally to a 45 plus listener who will account for more than 80% of the audience. • Interest is almost evenly divided between men and women, with an overall C2DE bias. • The service should be a strong motivator to stimulate DAB take up, with 69% of those choosing the service not currently owning a digital radio. • This service also has the potential to draw listeners away from the BBC – more than two thirds of those expressing interest currently listen to BBC stations, and almost a quarter <u>only</u> listen to BBC services.
Local Tastes & Interests	<p>Lincs Country will be a music experience, playing a broad range of new, old and crossover country music. Speech will include local news during daytime hours, and relevant information for the audience.</p>
Summary	<p>A popular format that would appeal to a 45 plus audience, bring new listeners to DAB digital radio and attract an audience from the BBC.</p> <ul style="list-style-type: none"> • New service • 45 plus profile • Appeals to men and women • Attractive to solus BBC listeners

Easy Radio	
Target Audience & Demographic Profile	<ul style="list-style-type: none"> • Research highlights high interest in the Easy Radio concept. • This service will appeal to a 45 plus listener, who will account for more than 80% of the audience. • There was a strong female bias and an overall C2DE bias. • The service should be a strong motivator to stimulate DAB take up, with 66% of those choosing the service not currently owning a digital radio. • This service also has the potential to draw listeners away from the BBC – almost three quarters of those expressing interest currently listen to BBC stations, and just over a fifth, 21% <u>only</u> listen to BBC services.
Local Tastes & Interests	Easy Radio is essentially a music experience, with a broad range of easy listening music from the 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"> • New service • 45 plus profile • Strong female appeal • Attractive to solus BBC listeners

Shuffle	
Target Audience & Demographic Profile	<ul style="list-style-type: none"> • The format has high appeal with its target under 35 audience, who will account for 70% of its audience. • It has a female bias • It is another new service that will stimulate digital take up, particularly among younger demographics, with 64% of those expressing interest not currently owning a DAB radio. • High interest from those who are heavy BBC listeners – 82% of those expressing interest are BBC listeners and more than a quarter <u>only</u> listen to BBC services.
Local Tastes & Interests	A youth format, reflecting on the musical tastes and interests of listeners in the area. It will be the first station in the area specifically targeting the area's younger listeners, enabling them to submit their own music for airplay, as well as contribute to programming.
Summary	<p>The station's musical genres (of modern rock, chart and dance) are extremely popular with the target audience. In contrast to the broader focused analogue local services (and niche specialist formats available on other platforms), this format will super-serve its listeners with information relevant to the target audience, including music updates and what's on.</p> <ul style="list-style-type: none"> • A popular new service • Under 35 profile • Female bias • Encourage DAB trail • Attractive to BBC listeners

UCB UK	
Target Audience & Demographic Profile	<ul style="list-style-type: none"> • UCB UK targets all adults, although the research highlights main interest to be with those aged 35 plus and where more than half, 54% are aged 35 to 54. • It is likely to have a slight female bias and deliver a strong ABC1 profile. • More than three quarters of those choosing this service do not currently own a DAB radio, indicating another service that should help drive take up. • A very high 76% of those wanting to listen to this type of service are currently listeners to BBC stations.
Local Tastes & Interests	UCB UK is a networked Christian radio station for the whole family. It will bring a unique service to the area, offering a rich alternative to existing provision. It will also provide a wide range of programming to inspire and transform the listening experience. The station is non-commercial, carrying no advertising other than for in-house services.
Summary	<p>UCB UK will appeal to listeners who want to hear programmes with religious themes or would like a station with a heavier speech to music ratio. It will also provide good commercial radio competition to the BBC and attract new listeners to DAB digital radio.</p> <ul style="list-style-type: none"> • New service • Broad audience appeal, but delivering an older 55 plus profile • Attract audience from the BBC • Female bias • ABC1 • Encourage DAB

Traffic Radio	
Target Audience & Demographic Profile	<ul style="list-style-type: none"> • The target for the service is broad, appealing not just to business commuters, but also housewives and parents with children. • Our research highlights very strong interest for a station broadcasting traffic and travel news and information.
Local Tastes & Interests	An innovative service from the Highways Agency providing 24/7 regionalised traffic and travel information and focusing on all major road networks. On traditional radio services, 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. Traffic Radio is a service to which drivers are able to 'dip-in' prior to or during a journey.
Summary	<p>By making information about the road network more accessible, the proposed service will help reduce congestion by informing motorists about major congestion problems, 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"> • New service • Broad interest • Encourage DAB in-car listening

Podcast Service	
Target Audience & Demographic Profile	<ul style="list-style-type: none"> The Podcast Service will include content of interest to all age groups, males and females. Interest in the service is particularly strong amongst younger audiences; almost three quarters would be under 45, with 30% aged under 25. The service will help promote DAB uptake, and therefore a move to DAB+, with 65% of those interested in the service not owning a DAB radio. 70% of those interested are BBC listeners.
Local Tastes & Interests	The service will carry a wide range of material, ranging from music to speech, and from content that will have national interest to content with a particular focus on Lincolnshire.
Summary	<p>The Podcast Service will enable the multiplex to cater for niche tastes and interests and small communities of interest, which would not otherwise be sustainable on a 24/7 basis.</p> <ul style="list-style-type: none"> An innovative new service Strong youth appeal Encourage DAB uptake

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
Lincs FM	Lincs FM Group Ltd	Yes	Yes
Compass FM	Lincs FM Group Ltd	Yes	Yes
Lincs Country	Lincs FM Group Ltd	Yes	Yes
Easy Radio	Easy Radio Ltd	Yes	Yes
Shuffle	MuxCo Lincolnshire Ltd	Yes	No
UCB UK	United Christian Broadcasters Ltd	Yes	Yes
Traffic Radio	Highways Agency	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.

114. MuxCo 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:

- Scrolling text functionality
- Electronic Programme Guide

115. As data technologies and standards mature, we will work with service providers to launch other data services (such as Broadcast SlideShow etc).

Dynamic Label

116. 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.

117. 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

118. Electronic Programme Guides ('EPG') are important in a multi-channelled environment – they allow listeners to find stations and programmes quickly, and enable functionality like "time-shifting" of stations. They enable service providers to promote their new services and programmes, and also allow the user to take advantage of features such as programme summaries, search by subject or channel, immediate access to the selected programme and also to set reminders for their favourite shows.

119. 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.

120. We have had detailed discussions with All In Media Ltd ('AIM') relating to the launch of an EPG channel on the multiplex. AIM's Managing Director, Chris Gould, led the WorldDMB TaskForce that created the DAB EPG standard. In the event of award of the licence, it is our intention to work with AIM to launch an EPG from the start of the licence term. The EPG will be transmitted in a dedicated packet data channel.
121. We also believe an enhanced EPG will allow listeners to navigate the podcasts that are available from the multiplex.

Use of variable-XPAD

122. From launch, we will enable each service provider to be able to run programme-related data services within their short XPAD data capacity. 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.
123. 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.

Podcast Channel

124. The multiplex will broadcast a Podcast Channel, managed by Folder Media Ltd. The channel will be a carrier for a variety of different podcasts (outlined in the answer to question 11) from a range of different service providers.

Other services

125. Folder Media, our data service provider, intends to provide a 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. Our general view is that we should encourage all types of data services to help organisations experiment with new DAB broadcast technologies.

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.

126. 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.

** Applicants should note that this information is not relevant to section 51(2)(d), which relates only to digital sound programme services, but this question is positioned here for convenience.*

127. 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.

128. The Lincolnshire licence area is overlapped in the northern half of the county by MXR's regional Yorkshire multiplex (which covers 59% of the proposed PPA) and by Emap's Humberside multiplex (34%).

129. MXR Yorkshire currently provides the following services:

Galaxy 105	A simulcast of the Yorkshire regional service, 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 Yorkshire regional service. A full service playing adult contemporary music, with speech including news, local information, phone-ins and comprehensive sports coverage. Approximately 33% speech.
Yorkshire Radio	A station for fans of Leeds United FC, providing 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 network 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 services playing a blend of contemporary and traditional Celtic, Southern Gospel, Classic Hymns and modern 'Praise & Worship' music. 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.

130. Emap Humberside currently provides the following services:

Viking FM	A simulcast of Humberside's mainstream contemporary hit station, playing popular music from a wide selection of music genres, with the majority of music from the preceding five years. Speech will feature news and information relevant to the 15 to 34 year old target audience. Approximately 20% speech
Magic	A simulcast of Humberside's music-led soft and melodic station. Speech includes news and information relevant to the 35 to 44 target audience. Approximately 20% speech.
Lincs FM	A simulcast of Lincolnshire's classic hits and adult contemporary music service. News and information is relevant to its Lincolnshire audience. Approximately 20% speech.
XFM	A service similar to XFM London, featuring innovative, modern rock with attitude. News and information is relevant to a core 15 to 34 audience. Once DAB penetration in Humberside reaches 33% of households, local news will be included at breakfast. Approximately 20% speech.
Gold	A networked classic hits station, featuring classic pop hits from 15 to 50 years prior to broadcast, targeting 35 to 54 year olds. Once DAB penetration reaches 33% of households, the service will include programming relevant to the area for four hours each weekday. Approximately 25% speech.
Kiss	A simulcast of Kiss London. A dance music service, with speech including news and information relevant to the target 15 to 34 audience. Once DAB penetration reaches 33% of households, will include local news and travel at breakfast. Approximately 15% speech.
Traffic Radio	A regional traffic and travel information service. Approximately 100% speech.
Kerrang	A service similar to Kerrang West Midlands, playing rock music with attitude, with appeal to 15 to 34 year olds and including news and information relevant to this audience. Approximately 5% speech.
Heat	A networked rhythmic adult contemporary music service playing current and non current tracks. News and information is relevant to the target 25 to 44 audience. Approximately 5% speech.

131. Whilst the Humberside multiplex covers 34% of the County of Lincolnshire, the 66% of the area that it does not cover includes the City of Lincoln. As a local multiplex, Humberside inevitably carries a number of quasi-national formats which are pertinent to Lincolnshire (and indeed any local area). We recognise that in the overlap area, there will be a number of duplicated formats. However, we consider this a small inconvenience whilst enabling a large percentage of the population to receive such services for the first time. For the purpose of this question, we have not made further reference to the Humberside multiplex when considering broadening of choice.

132. We believe that MuxCo Lincs will deliver a breadth of programming that will complement and increase commercial radio choice. In addition to existing local commercial services, the multiplex will carry a selection of locally focused services, as well as a number of networked, nationally focused services targeting specific communities of interest.

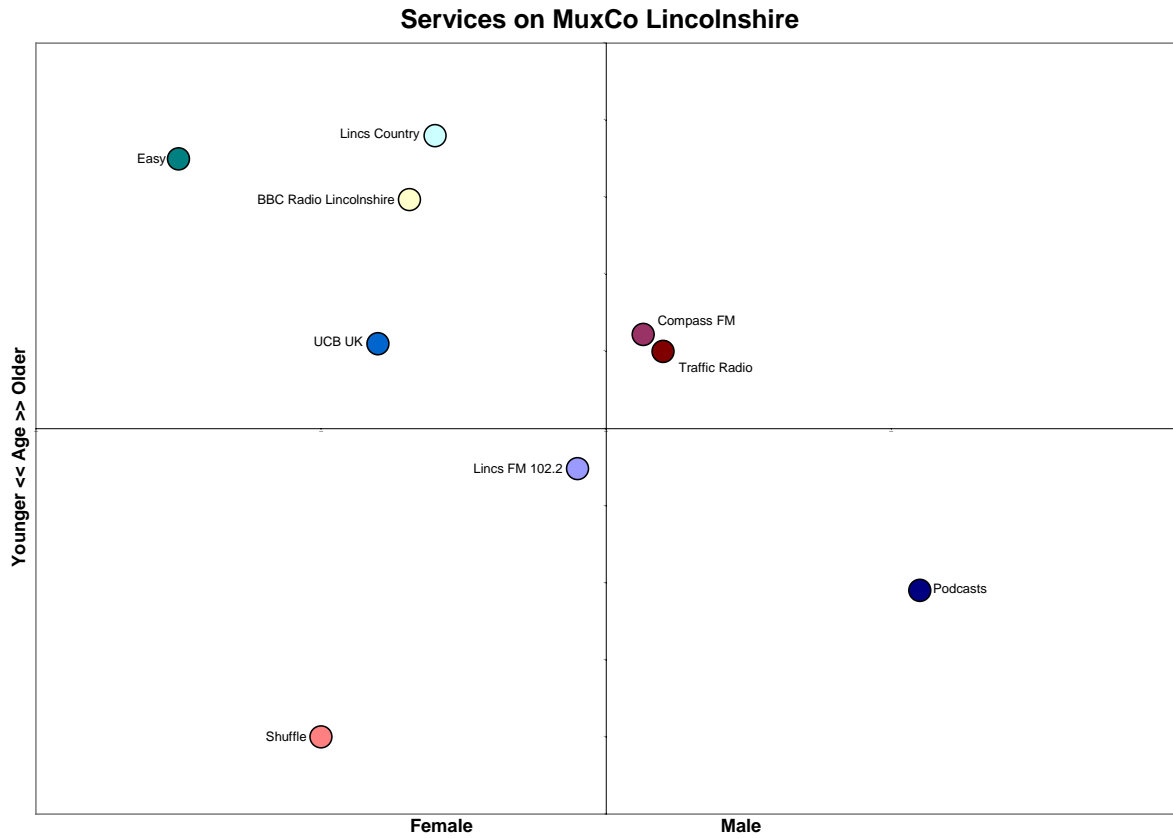
Lincs FM 102.2	<p>A contemporary hit music and information station for Lincolnshire, targeting 25 to 45 year olds. It plays a wide variety of music, but mostly a spread of hits from the last 5 decades, including currents, re-currents and the occasional non-hit album track. Whilst the station is music led, local news and information features are provided across daytime. As a broad appeal format, it will overlap to a degree with the music played on some other music focused services. However, none of the new services cover the range of music played by Lincs FM. In addition, Lincs FM's heritage position and editorial focus will ensure that it continues as a key local service. Lincs FM's inclusion on the multiplex will ensure all current listeners can hear the station in digital.</p>
Compass FM	<p>A complementary service to Lincs FM, Compass FM targets a 30 plus audience playing a mix of classic oldies and melodic pop music from the last 5 decades. It provides a comprehensive local news and information service focusing on Grimsby, Cleethorpes and Immingham, which includes weather, travel, community news, interviews/phone-ins and a weekly religious feature. The ability of Compass FM to increase its broadcast area through DAB will enable this popular service to be heard across the whole county. Whilst there will be some musical overlap with broad formatted services, Compass FM is the only service focused on super-serving its local community.</p>
Lincs Country	<p>A music based service playing a range of country music. Whilst there will be some music overlap with Easy Radio, Lincs Country will focus specifically on this genre and will play a broad mix of country music genres and from a wide range of eras. The service will also be differentiated by its speech content, including local news and relevant information for the target audience.</p>
Easy Radio	<p>A music based service playing a range of easy listening genres featuring familiar music from 60s to today and drawn from a broad library. Whilst there will be some music overlap with Compass FM, Smooth FM (which is only available in the northern half of the area) and Lincs Country, the broad music mix of Easy Radio, including music from artists with country, rock, folk and blues influences, provides a point of difference and a broadening of choice over other proposed services. Speech, with news and relevant information for the audience and an element of interactive programming, will also act as another point of differentiation. In addition, plurality of ownership provides additional broadening of choice.</p>
Shuffle	<p>A youth station focusing on the tastes and interests of under 35s, with an emphasis on under 25s, exclusively playing a mix of chart, dance and rock tracks. Whilst a number of specialist services playing the music genres that Shuffle will cover exist on the existing multiplexes, these focus on particular genres and none carry the range of music that Shuffle will play and its commitment to listener-generated content. In addition, as part of quasi-national networks, none are able to include locally generated content. In addition, they are only available in the north of the area. Musical overlap with Lincs FM arises from the latter's broader format. However, Lincs FM's positioning as an older targeted service provides greater differentiation in its style and editorial focus. The range of music will be Shuffle's principal differentiator, as will its positioning as a youth service and its style and editorial focus. In addition, Shuffle will have a commitment to listener-generated content. For younger listeners, Shuffle will be a welcome addition to the radio landscape, providing local commercial competition to BBC Radio 1.</p>

UCB UK	A unique service targeting the Christian community with contemporary Christian music and classic favourites, alongside news, current affairs, teaching and a positive perspective on today's lifestyle. UCB UK will cater for the many listeners who would like a Christian perspective on the radio and enjoy a more speech-led radio experience. There will be minimal music overlap between UCB UK and other services on the multiplex. Whilst UCB UK is available on the Yorkshire regional multiplex, this only serves North Lincolnshire. Inclusion on the new multiplex will ensure this valued service is audible to all.
Traffic Radio	A unique service providing regular and up to date traffic and travel information. It will be distinct from other services on the multiplex and from other travel services available in the county. While existing services provide traffic and travel bulletins, these are often limited in scope and only broadcast during peak programming. Only Traffic Radio will provide traffic information 24/7.
Podcast Service	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. The inclusion of a Podcast Service will bring additional listening choice to all, and especially younger demographics.

133. As a whole, our proposed complement of services caters for:

- People interested in hearing local news and information, with at least 3 services providing such content and with the Podcast services providing further localness, and catering for different tastes and interests.
- A wide age range, albeit with more choice for the 35 pluses because of their dominant position within the population and because of a willingness to switch from the BBC with the right choices available. Additional choice for younger listeners will be provided through Shuffle and the Podcast Service.
- A significant proportion of the population, as well as for a broad range of listeners' tastes and interests.

134. The following chart summarises the profiles of each service to be carried on the multiplex in relation to their age and male to female interest. It highlights how the proposed new services will complement existing choice. Information for existing services is taken from RAJAR and for the new services from our commissioned research.



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	<p>To analyse the local market</p> <p>To get an up to date picture of the digital landscape.</p>	<p>To review population growth and change.</p> <p>To track digital penetration.</p>	<p>Analysis of Census 2001 data.</p> <p>Review of DRDB and relevant RAJAR data on digital audiences.</p> <p>Analysis of existing multiplexes.</p>	Not relevant	October 2007
Consultation with local councillors	To gain further insight into local needs and issues.	The issues which the area faces	Email and Internet based questionnaire	299 local councillors of which 72 responded	November 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.	Not relevant	October 2007
Consumer Study	<p>To further understand the local radio market.</p> <p>To gauge consumer awareness, understanding and usage of DAB digital radio.</p> <p>To quantify interest in potential formats and data usage applications.</p> <p>To estimate audience levels, individually and collectively, for the proposed complement of services.</p>	<p>To investigate the performance, strengths and weaknesses of existing services.</p> <p>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.</p> <p>To look at the propensity to listen and the impact that the new services collectively would have on the existing market.</p>	<p>Consumer survey conducted by TNS.</p> <p>All interviews conducted face to face using Computer Aided Personal Interviewing equipment.</p>	<p>300 adults 16+ from across the PPA.</p> <p>Sampling PPS Quota controls to known demographic profile.</p>	12 th November to 9 th December 2007
Lincs FM listener survey	To understand current Lincs FM listeners' interest in potential DAB services.	To look at level of interest for existing analogue to broadcast in digital, and interest in other formats.	Online survey through the Lincs FM website.	443 responses	November and December 2007

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

- A. The Lincolnshire market
- B. Consultation with locally elected representatives
- C. Radio choice
- D. Current radio listening habits
- E. Uptake of DAB digital radio
- F. What people would like from digital radio
- G. What does the future hold for digital radio?
- H. Lincs FM listener survey

A - The Lincolnshire market

136. Lincolnshire is a large and diverse county. It is the second largest of the English counties by area and 15th by population. Since 1995 the county's population has increased by 11%, one of the largest increases in the country, and is set to rise by a further 10% by 2014 (compared to 4% across England). As well as an increasing population, the county faces an ageing population profile. The population is spread out across the county, with a resulting low population density.
137. Unemployment is low, as are economic activity rates, reflecting the older population generally and the high proportion of people of working age who are retired.
138. A high 15% of people who live within Lincolnshire work outside of the county. With a relatively under-developed trunk road network in the county, the provision of up to date traffic information will have considerable value.
139. Lincolnshire's long-standing reliance on traditional industries such as agriculture remains high and provides a stable economic base. The rural and coastal economies also provide seasonal employment to a transient workforce, many of whom now come from across Europe, and who will welcome the provision of local information services in their mother tongue which can be provided through the Podcast service.
140. The county is also home to a diverse range of manufacturing companies, in particular chemical, textile, electronic and electrical products, plastics and packaging, automotive components with a plethora of agricultural and food related industries. The City of Lincoln's economy is based mainly on public administration, farming and tourism. As in many urban areas, many businesses have ceased production in the city, leaving large industrial warehouse-like buildings.

141. The following table analyses the adult population within the TSA (using Q3 2007 data), highlighting the relative demographic splits of the population, with comparison to the UK as a whole.

	Lincolnshire	UK	Index on UK
15 to 24	14.8%	16.1%	92
25 to 34	11.9%	15.5%	77
35 to 44	17.5%	18.4%	95
45 to 54	16.2%	16.0%	101
55 to 64	16.8%	14.5%	116
65 plus	22.7%	19.5%	116
ABC1	45.6%	53.6%	85
C2DE	54.4%	46.4%	117
Male	48.5%	48.6%	100
Female	51.5%	51.4%	100

- Lincolnshire has an older and higher C2DE profile than the UK average.
- It has a marked under representation of under 45s, and 25 to 34s in particular.
- By contrast, all age groups 45 plus are over represented, with both 55 to 64 and 65 pluses over represented by 16%.
- There are significantly more C2DEs compared with the UK as a whole, indexing at 117.
- The county's strongly atypical population profile, which trend analysis suggest will be compounded in the years ahead, has been taken into consideration when reviewing the range of services we propose to offer on the multiplex.

B - Consultation with locally elected representatives

142. In association with Lincs FM, all county and local councillors within the TSA were written to explaining DAB digital radio and the local opportunity, and asking them to complete an online survey about radio. The strong response – 72 responded, shows the strong relationship Lincs FM has with its community.
143. As a community orientated group, it was no surprise that their main listening was to Lincs FM and BBC Radio Lincolnshire (with Radio 2, Radio 4 and Classic FM also strong). All respondents had tuned to their favourite stations on analogue radio, but 22% had also listened via DAB.
144. Their satisfaction with local commercial radio was high with over 80% 'quite' or 'very' satisfied with what they could already hear. In relation to new formats, councillors were most keen to hear an easy listening station (41%) and a traffic station (37%), suggesting they will be pleased to find both Easy and Traffic Radio. A high 22% also requested country music, and this will be satisfied with the introduction of Lincs Country from a brand they trust.
145. Many councillors (37%) felt that no specific age group was badly served by existing radio. Those who believed that certain groups were underserved cited children under ten and the elderly. County issues that they felt were critical included the environment, transportation, education of the young and the effects of an ageing population.

C - Radio choice

146. Two local commercial analogue services and one local BBC service currently serve the county. These services are listened to by 403,000 (48.9%) of adults each week, and account for 30.6% of all radio listening:

- Lincs FM 102.2
- Compass FM
- BBC Radio Lincolnshire

147. There are a number of services which operate outside the county but which attract an audience along the border. These services, which account for 7.7% of all radio listening and are in the main already available on multiplexes relevant to their analogue footprints, include:

- Viking FM
- Magic
- Galaxy
- Smooth Radio
- Rutland Radio

148. Our RAJAR analysis indicates that there is a small level of listening to other services (1.1%), which is substantially lower than the UK average (2.2%).

149. With regard to national radio, the national services of the BBC and commercial services carried by Digital One are audible across the county, as will be the services proposed by 4 Digital Group from late 2008.

150. Current local DAB choice is provided through the MXR Yorkshire regional multiplex (available to 59% of the population in the northern half of the area) and by EMAP's Humberside multiplex (34%, again in the northern half).

D - Current radio listening habits

151. RAJAR audience data has been analysed within the Lincs FM TSA, using rolled 12 month periods ending Q3 in each of the last 3 years. The following table details total audience and hours over this period.

Population '000s	2005 758	2006 769	2007 825
Reach %	92.8%	92.4%	90.3%
Reach '000s	703	710	745
Total Hours '000s	18,319	19,422	18,157
Ave. Hours	26.0	27.4	24.4

- The population within the Lincs FM TSA increased by 7.3% in 2007 following changes in TSA definition by RAJAR to count only whole postcode districts rather postcodes sectors.
- Over the last three years, all radio reach has declined from 92.8% to 90.3%, this compares with the UK where all radio reach moved from 90% to 90.2%
- Average time spent listening has also declined down from 26.0 hour per week in 2005 to 24.4 in 2007 (compared with the UK which has declined from 24.0 to 23.1).

152. We have reviewed radio listening in Lincolnshire against data for the UK as a whole to gauge how listening in the county compares. The following table summarises RAJAR performance for the 12 months ended Q3 2007 within Lincolnshire and compares this with the UK as a whole.

Market Share	Lincolnshire	UK	Index
All BBC	55.9%	55.0%	102
• BBC Network	44.9%	44.6%	101
• BBC Local	11.0%	10.4%	106
All Commercial	43.0%	42.8%	100
• INR	10.1%	10.9%	93
• ILR	32.9%	31.9%	103
Other	1.1%	2.2%	50

153. Despite the comparatively low number of local commercial services in the market, commercial radio performs ahead of the UK average.

- Overall, the BBC only slightly over performs in this area - a reflection of the very strong allegiance to and performance of the local commercial service.
- ILR overall scores on a par with the UK average which is particularly good considering the paucity of local commercial services.
- BBC Local radio over performs; a result, we believe of the strong 45 plus population and general support for local commercial services.
- Commercial radio's performance is extremely strong at 43%, marginally higher than the UK average despite low numbers of commercial stations.
- In relation to national commercial radio, Lincolnshire underperforms, especially talkSPORT.

154. The following table details the relative historical market shares between the BBC and commercial radio within Lincolnshire for three key age groupings, and compares the 2007 data with results for the UK as a whole.

Market Share by Age	2005	2006	2007	UK 2007
15 to 34				
All Commercial	44.6%	49.0%	53.5%	55.4%
All BBC	55.1%	46.7%	45.2%	42.0%
35 to 64				
All Commercial	48.0%	45.9%	46.1%	43.3%
All BBC	50.6%	52.0%	53.0%	54.5%
65 pluses				
All Commercial	20.7%	20.1%	22.9%	25.1%
All BBC	78.7%	79.5%	75.8%	73.3%

Source RAJAR 12 mths ending Q3

- The commercial sector succeeds in achieving market leadership with 15 to 34s, with share currently standing at 53.5%, a result that demonstrates continuous improvement over the past two years. The overall performance in this age group is now only just below the UK average which is a significant achievement given the low number of commercial services available.
- Whilst commercial radio's performance is strongest overall with 15 to 34s, its performance among 35 to 64s at 46.1% is ahead of the UK average, with below average performance from the BBC. Whilst commercial radio has improved with this age group over the past 12 months, it still has yet to recover its 2005 level. More services offering choice with this age group will have a positive benefit for commercial radio overall since the age group is both significant in size and growing.

- The performance of commercial radio with the 65 pluses is predictably poor and in line with the UK average. Interestingly, while the BBC dominates in this age group, its performance has declined year on year. Given the over representation in the population of all sub sets of this age group, better and more variety of services will help to improve commercial share.

155. The table below details reach and hours profiles for BBC, all commercial radio and all ILR, and their indexation against the population.

Reach	All BBC Radio	Index on Population	All Commercial	Index on Population	All ILR	Index on Population	Population Profile
	%		%		%		%
15-24	13.6	92	17.3	117	18.0	122	14.8
25-34	11.2	94	13.6	114	14.6	123	11.9
35-44	17.5	100	20.0	114	21.8	125	17.5
45-54	16.0	99	18.5	114	19.9	123	16.2
55-64	18.0	107	16.6	99	14.9	89	16.8
65+	23.7	105	14.1	63	10.8	48	22.5

Hours	All BBC Radio	Index on Population	All Commercial	Index on Population	All ILR	Index on Population	Population Profile
	%		%		%		%
15-24	9.3	63	17.1	116	15.6	105	14.8
25-34	10.2	86	13.0	109	13.8	116	11.9
35-44	15.7	90	21.8	125	23.5	134	17.5
45-54	15.0	93	23.0	142	24.3	150	16.2
55-64	21.3	127	13.9	83	13.2	79	16.8
65+	28.5	127	11.2	50	9.6	43	22.5

- In relation to the BBC:
 - o The BBC's reach profile is *broadly* in line with the population profile, although it under delivers with 15 to 34s.
 - o In relation to hours listened, it substantially under delivers amongst all those aged under 54, and in particular those aged under 35.
 - o Conversely, it achieves high hours of listening amongst older age groups, resulting in above average levels of listening.
- In relation to commercial radio:
 - o The reach profile shows a distinct bias to delivering an under 55 audience.
 - o In relation to time spent listening and therefore satisfaction with the service provision, commercial radio over delivers in all age groups under 55 and particularly with those aged 35 to 54.
 - o The same finding is true of ILR listening, and whilst ILR over performs with under 35s when compared with the UK, this performance suggests room for improvement.
 - o In addition, ILR appears not to be delivering enough services with appeal to older audiences, especially the 55s and over.

156. The following table summarises the historical performance of each local service over the last three years.

	2005	2006	2007
Lincs FM 102.2			
Weekly Reach %	38.8%	37.9%	36.4%
Total Hours '000	3,759	3,626	3,791
Market Share	20.5%	18.7%	20.9%
Compass FM			
Weekly Reach %	4.5%	4.2%	4.7%
Total Hours '000	417	418	413
Market Share	2.3%	2.2%	2.3%
BBC Radio Lincolnshire			
Weekly Reach %	15.9%	15.8%	14.6%
Total Hours '000	1,539	1,617	1,353
Market Share	8.4%	8.3%	7.5%

Source RAJAR rolled years ending Q3

- Over the period, Lincs FM 102.2 has improved its market share position. Bearing in mind the fact that its TSA has grown 8.8%, the percentage weekly reach of 36.4% achieved in the year ending Q3 2007, belies its current weekly reach of 37.2%. Average hours are relatively stable, which is contrary to the overall performance of radio in the market, which has declined.
- Over this period, Compass FM has achieved a steady performance. In this significantly larger TSA, it has maintained a steady market share.
- By comparison, BBC Radio Lincolnshire has slowly lost market share, particularly in 2007, a function of both fewer listeners and listeners spending less time with the station. It would appear that there is a significant opportunity to attract this audience to commercial radio.

157. Our consumer research supports the RAJAR results:

- 67% of consumers claim to have listened to commercial radio in the last week, a level almost identical to the BBC's 66%.
- ILR on its own achieved a 54% weekly reach underpinning the strong performance of the core local services in this marketplace
- Lincs FM 102.2 was listened to by 46% of adults.
- Galaxy scored highly at 17%, with 96.9 Viking FM (which overlaps on the northern boundary) is listened to by 9%.
- Lincs FM is by far the most popular service, scoring significantly ahead of both BBC Radio 1 (32%) and Radio 2 (31%).
- The BBC only outperforms the commercial sector amongst over 55s, with 67% listening to BBC compared with 53% commercial.
- Amongst 35 to 54s, commercial radio significantly outperforms the BBC (82% v 64%)
- Amongst 16 to 34s, both sectors perform equally well (68%).
- 22% of all adults claim to be Solus BBC radio listeners, i.e. do not have any commercial services in their repertoire. 30% of 55 pluses and 21% of 16 to 34 year olds are solus listeners. New services planned for the multiplex which specifically target these age groups will help erode this position.

E - Uptake of DAB digital radio

158. The uptake of DAB is strong, and with new developments over the next 12 to 18 months, such as the iPod adapter and in-car receivers, means that by the time the multiplex launches, the potential DAB audience in Lincolnshire will be significant.
159. The latest sales data from the DRDB is that 6.45m DAB sets had been sold by the end of December 2007, whilst RAJAR Q3 2007 highlights that 28.4% can access DAB. This level is slightly lower than claimed DAB ownership in our research, where:
- 27% claim to own a DAB radio, and a further 6% can access a DAB radio.
 - There does not appear to be a significant difference by age in the penetration of ownership.
 - A higher proportion of under 35s claimed to be able to access DAB radio.
 - Ownership was found to be significantly higher amongst ABC1s.
160. The following table details the profiles of adults in DAB homes (per RAJAR) in Lincolnshire against the UK profile.

	Profiles of		Lincolnshire Index on UK DAB Population
	UK Population DAB Profile	Lincolnshire Adults in DAB Homes	
	%	%	
Men	52.6	54.8	104
Women	47.4	45.2	95
16 to 24	16.8	14.6	87
25 to 34	15.8	6.9	44
35 to 44	19.9	12.0	60
45 to 54	18.7	27.5	147
55 to 64	15.2	21.9	144
65 plus	13.6	17.1	126

Source RAJAR 12 mths ending Q3 2007

- Adults in DAB homes in Lincolnshire are more likely to be aged 45 and over than the UK average. Age groups under 45 are significantly below the UK average. Ownership also showed only a slight male bias.
161. In our survey, we asked DAB owners what led them to purchase a set in the first place. The key motivators were:

	Adults
To have interference free reception	31%
Improved sound quality of existing analogue (FM/AM) radio stations	30%
Ease of tuning, finding stations by name not by frequency	22%
To hear new stations that aren't currently available on your FM/AM radio	18%
Because I like to keep up with new technology	16%
To see information on the screen of the digital radio	5%

- Amongst 16 to 34s, keeping up with new technology was cited as the most important reason. This age group also saw ease of tuning as a strong motivator.
- For 35 to 54 year olds, improved sound quality and interference free radio were the strongest motivators. This age group also scored choice of new stations higher than any other age group, highlighting the need for services targeting this age group.
- 55 pluses rated the prospect of interference free reception as their prime motivator.

162. Having acquired a set, DAB owners were asked whether DAB had met their expectations:

	Adults
Improved sound quality of existing analogue (FM/AM) radio stations	26%
To have interference free reception	23%
Ease of tuning, finding stations by name not by frequency	19%
To hear new stations that are not currently available on your FM/AM radio	13%
To see information on the screen of the digital radio set	5%
Because I like to keep up with new technology	0%

- Generally the experience of DAB digital radio had lived up to its expectations.
- Under 35s showed above average interest in ease of tuning and being able to find stations by name rather than by frequency (26%).
- Those aged 35 to 54 rated interference free reception strongly (34%) and had above average interest in hearing new stations (22%).
- Improved sound quality of existing services continued to be seen as the biggest asset of digital radio among most of the main listener sub groups. ILR listeners in particular said this (37%), as did all commercial radio listeners generally (32%). Solus BBC listeners placed interference free reception highest (30%), followed by ease of tuning (25%) and hearing new stations (21%).

163. Non DAB owners were asked what would tempt them to acquire a DAB set:

	Adults
Improved sound quality of existing analogue(FM/AM) radio stations	26%
To have interference free reception	23%
Ease of tuning, findings stations by name not by frequency	17%
To hear new stations that are not currently available on your FM/AM radio	14%
Because I like to keep up with new technology	4%
To see information on the screen of the digital radio	3%

- The prospect of interference free reception was either the first or second most important asset to each age group when it came to their decision to purchase a DAB digital radio.
- Under 25s rated being able to hear new stations as a prime factor. This age group also valued interference free reception as well as ease of tuning.
- Interference free reception and the ability to hear existing services in improved sound quality was the catalyst for those aged 25 to 34.
- Listeners to commercial radio showed above average interest in improved sound quality (30%), interference free reception (26%), ease of tuning (20%) and hearing new stations (16%).

164. Since Q2 2007, it has been possible to quantify radio listening by platform through RAJAR. Overall, the response to this additional aspect of data collection in the survey diary has been high. 24.3% of listening is currently not attributed (down from 31.4% in Q2 2007).

165. The following table summarises the split of total UK digital listening between each platform, and details the relative digital splits between each category for all radio, for the BBC and for commercial radio. In overall terms, 15.0% of all radio listening is via digital platforms, up 17% quarter on quarter. There are slight variations between commercial and BBC listeners. Commercial radio delivers a higher proportion of its listening via digital than the BBC, 16.8% v 13.4%.

	Lincs % of All Digital Hours*	UK % of All Digital Hours	UK % of All BBC Digital Hours	UK % of All Commercial Digital Hours
DAB	60.8%	57.0%	68.5%	47.7%
DTV	0%	19.7%	13.8%	25.4%
Internet	14.4%	10.9%	10.4%	8.6%
Other digital	24.7%	12.4%	7.1%	18.4%
	100%	100.0%	100.0%	100.0%

Q3 2007 Published for Lincs 102.2 TSA

- For the UK as a whole, DAB accounts for 57% of total digital listening, ahead of DTV and the internet.
- Among UK commercial listeners, DAB represents 47.7% of all digital hours, with DTV more highly rated at 25.4%.
- Across the UK, the BBC derives the vast majority of its digital listening via DAB, with a significantly lower 13.8% coming via DTV.
- Within the Lincs FM market, DAB accounts for 60.8% of digital listening with DTV not figuring at all and the internet scoring well at 14.4%, a finding which suggests that consumers in this market are seeking new choice.

166. Finally, those with access to DAB were asked what impact their DAB radio had had on their radio listening:

- 75% claimed that DAB had not changed the amount of time they spent listening to the radio.
- Of the balance, just over three quarters said that they listened more
- This finding bodes well for radio in that DAB has the potential to stem the overall decline in total radio listening in recent years.
- 16 to 34 year olds were most likely to say that they had listened more.
- Listeners to digital only services were most likely to say they now listened to more radio (24%), indicating perhaps how they have increased their repertoire of stations listened to, rather than just substituting services.

F - What people would like from digital radio

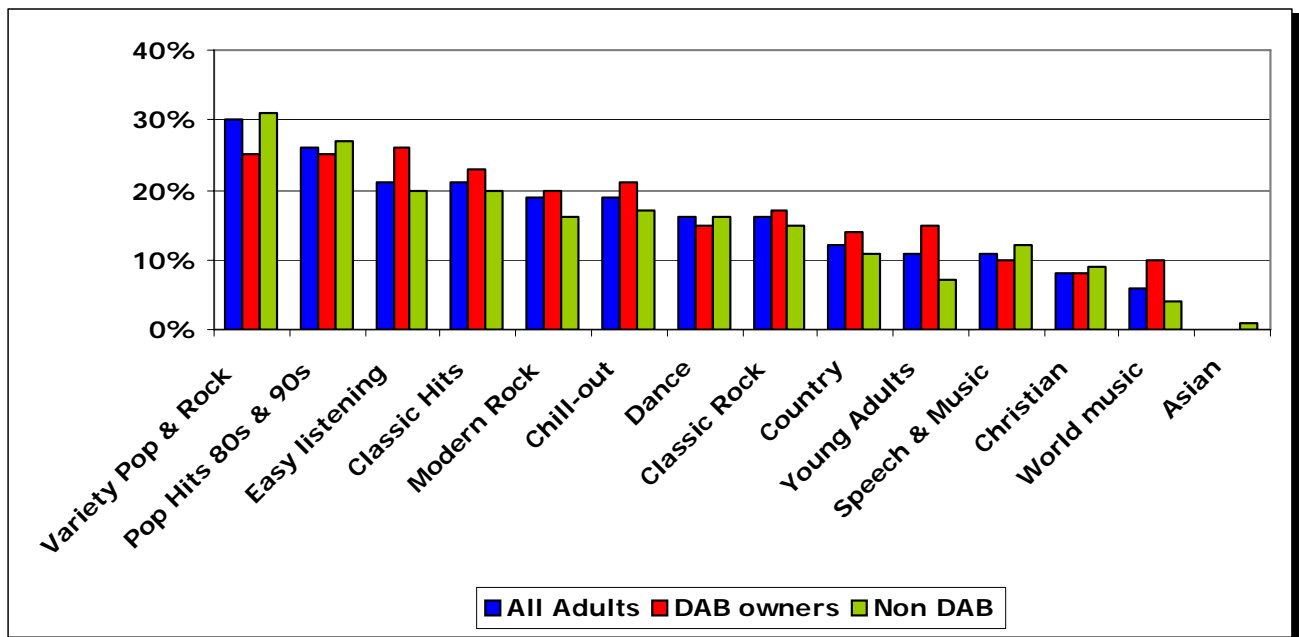
167. Having reviewed existing radio listening habits through RAJAR and our local consumer research, the next stage of our research was to evaluate interest in existing radio services, new formats and data services. The following table summarises the results for the two local commercial services.

	All Adults	DAB owners	Non DAB
Lincs FM 102.2	56.0%	57.0%	55.0%
Compass FM	8.0%	5.0%	8.0%

- Lincs FM's result is higher than the number that claim to listen to the station on a weekly basis, and highlights the importance of this service and therefore local radio in this market.

- Compass FM's result reflects its smaller footprint across the wider multiplex TSA, but still indicates a clear demand. As a format, interest in Compass' mix of classic oldies and melodic pop is also registered by feedback to the 'Classic Hits' format in our research (see below).

168. Our consumer research also sought to gauge interest in a range of music genres and lifestyle genres. The majority of formats tested in the consumer research were ones for which we were confident that a service provider would be forthcoming, either at the time of the application or during the licence period. In addition, we felt that having consumer reaction to additional alternative format choices would be particularly relevant when expanding the choice of services in the future (either full or part time, or as Podcast services).



169. In selecting formats for inclusion on the multiplex, the following factors were considered:

- The profile of the population
- Existing commercial analogue services
- Research findings for new services
- Interest from programme and podcast service providers

The profile of the population

170. Lincolnshire's profile is different from the UK average:

- It has an older and higher C2DE profile against the average for the UK.
- It has a marked under representation of under 45s, and 25 to 34s in particular.
- By contrast, all age groups 45 plus are over represented, with both 55 to 64 and 65 pluses over represented by 16%.
- There are significantly more C2DEs compared with the UK as a whole
- Trend analysis suggests that the atypical nature of the market will be compounded in the years ahead.

Existing commercial services

171. Our analysis of the audience profiles of Lincs FM and Compass FM, along with their stated intentions laid out in their "format promises", indicates that whilst Lincs FM has a broad appeal, its strength is amongst 35 to 54 year olds. Compass FM has a much stronger 45 plus interest, with this group representing 62.2% of the audience.

Research findings for new services

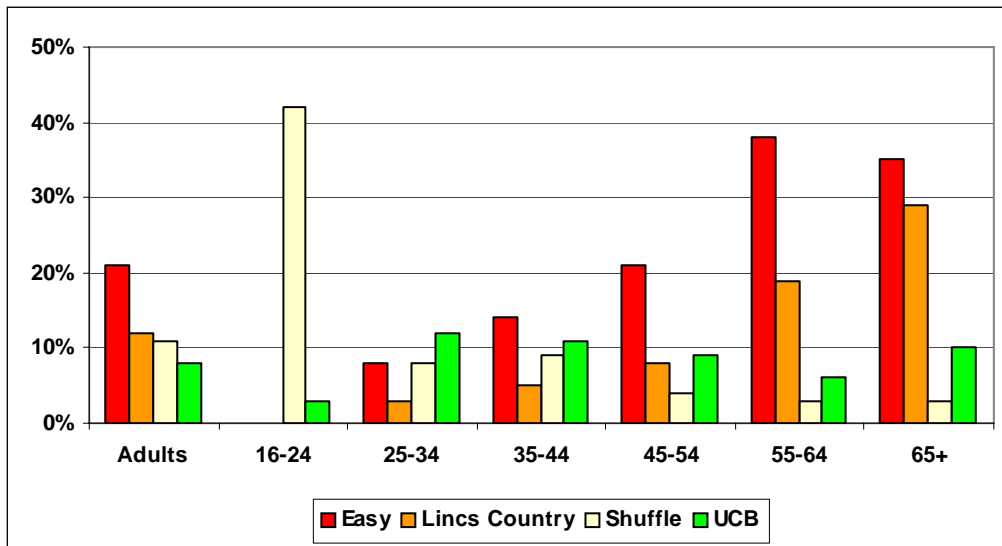
172. In evaluating formats, we have also analysed scores in overall terms, as well as by ten year age groups.

173. Whilst our research assisted in our selection of formats, it is not the primary driver. Having an identified and confirmed service provider for a format was deemed of higher importance than purely the score of a particular format. We are aware that we could have included certain formats in our line up which would have further increased overall interest in the multiplex. However, from our extensive multiplex experience, we know the implications of including unsupported formats in an application. Whilst they make the overall complement of services look better during the application process, such services have tended never to appear in reality, with the multiplex having to seek changes in the services carried. We have therefore elected only to include services where there is a confirmed service provider. When we are able to provide new services, our research will help support any request to Ofcom to amend our licence to include such additional services.

Interest from programme and podcast service providers

174. We have actively sought interest from a variety of service providers and have explored opportunities for the provision of podcast service. It is our belief that this will increase choice of content significantly in the market whilst allowing new entrants to explore the medium in an affordable way. We have in particular sought the involvement of local groups and organisations to provide content.

175. Our chosen selection of formats therefore reflects the older population in the county, as well as the need to provide a selection of new services that caters for a wider range of age groups. Whilst in the chart below, some formats may appear to have limited broad appeal, their specific targeting makes them an important component in the overall complement of services.



- **Easy Radio** has broad appeal across all age groups 35 plus, but particularly with those aged 55 plus where the potential is 36%.
- **Lincs Country** finds overall interest with 12% of the audience, but especially with 55 pluses.
- **Shuffle** attracts overall interest of 11% of respondent, but a very high 42% amongst its target 16 to 24 audience. In addition, when evaluating this service, it is important to look at the individual music genres that would feature.
- **UCB UK** is a niche service. Whilst 8% of all adult are interested in the proposed service, significant interest was shown by 25 to 44 year olds.
- **Traffic Radio** was highly rated, and underpins the very real problems that exist in getting around the county.

Maximising Appeal

176. The following table summarises the anticipated audience profiles for the new services based on those who would listen at least weekly to that service.

	Country %	Easy %	Shuffle %	Christian %	Podcasts* %	Traffic** %
Male	44 (47)	35 (39)	40 (41)	42 (52)	61	52
Female	56 (53)	65 (61)	60 (59)	58 (48)	39	48
15-24	- (-)	- (-)	67 (61)	6 (4)	30	14
25-34	3 (3)	6 (5)	10 (9)	11 (20)	16	6
35-44	9 (8)	9 (11)	13 (15)	22 (24)	25	20
45-54	12 (11)	16 (16)	7 (6)	17 (16)	18	28
55-64	29 (28)	36 (34)	- (3)	17 (12)	4	20
65+	47 (50)	33 (34)	3 (6)	28 (24)	7	12
ABC1	44 (43)	36 (37)	50 (52)	68 (60)	52	65
C2DE	56 (57)	64 (63)	50 (48)	32 (40)	48	35

NB:

- The figures in brackets show the profile of those who would personally choose to listen to this service in digital quality.
- In the case of Podcasts*, the profile is based on those who would like to have access to these as an additional audio service.
- The Traffic** profile is based on those who would like to receive this information in audio form.

Frequency of Listening

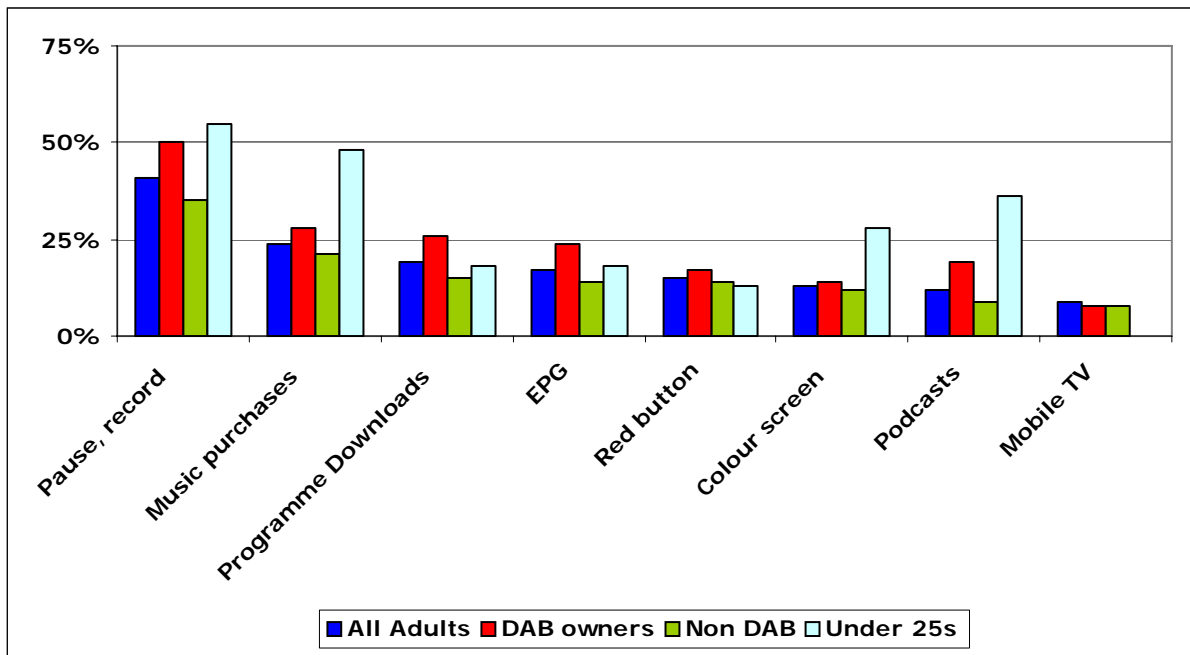
177. For each programme service chosen, respondents were asked to say how frequently they would listen. The table below shows the likely weekly reaches based on those choosing the formats and how this would translate as a percentage of the total adult population

	Weekly Reach – All adults %	Weekly Reach - Choosers %
Lincs FM 102.2	51	92
Compass FM	7	96
A station playing melodic, easy listening music from the last 4 decades and today	18	88
A station playing classic and modern country music	11	95
A station playing music, news, current affairs and lifestyle reflecting the Christian faith	6	75
A station playing the music and reflecting the lives of teenagers and young adults	10	91

- Enthusiasm for the selected formats was high, with at least 75% of those choosing the formats saying that they would listen at least weekly. For the vast majority of formats, the level of weekly listening was above 90%.
- When transposed as weekly reach across the sample as a whole, we calculate that the new services should be capable of achieving the following weekly reaches:
 - o Melodic easy listening - 18%
 - o Classic and modern country - 11%
 - o Music and reflecting the lives of young adults - 10%
 - o Christian service - 6%.

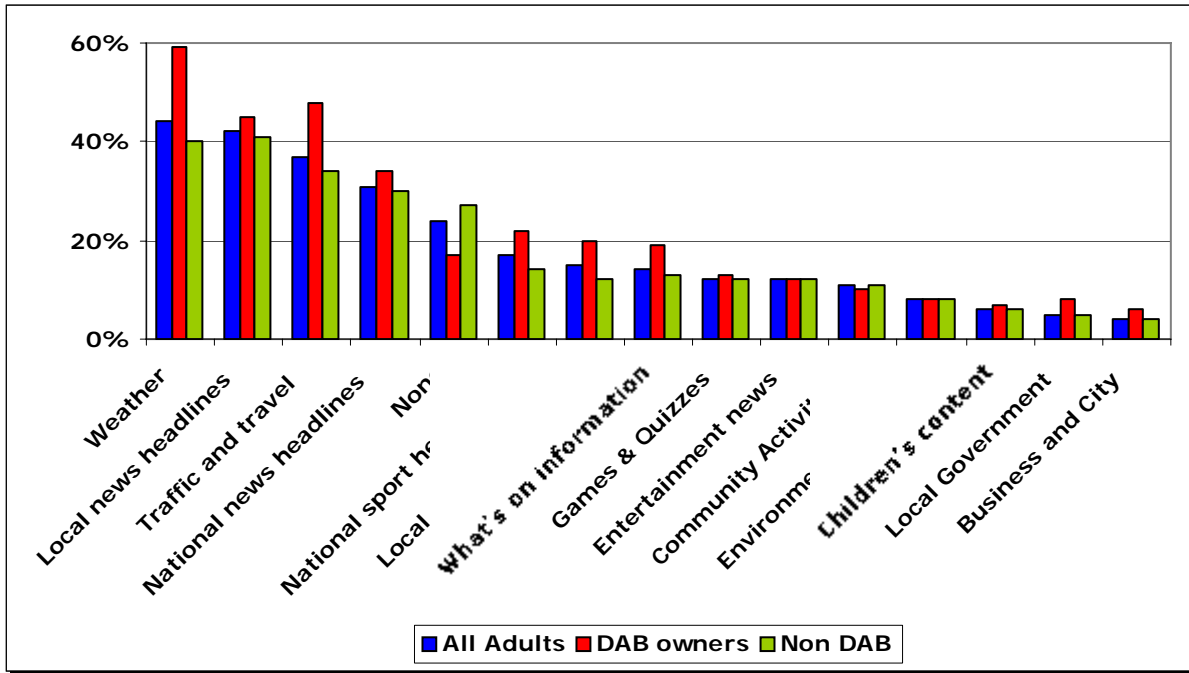
Data Functionality and Services

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

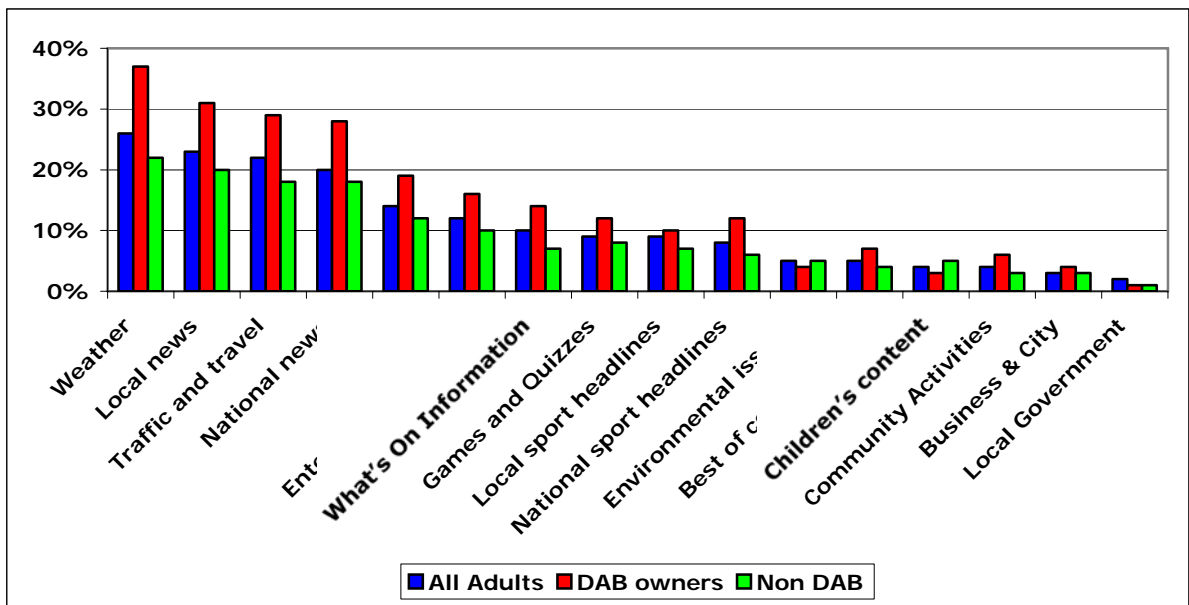


- A high 41% of respondents want their DAB digital radio to have the ability to pause and rewind a programme in the event of being disturbed. This was by far the most popular feature.
- Almost a quarter like the idea of being able to purchase and save a song that was being listened to. In a similar vein, respondents also liked the idea that they might be able to download specialist music or speech programmes, i.e. radio podcasts.
- Of least interest was being able to access television through a mobile phone style device.
- Listeners to commercial radio were inclined to express above average interest in each of these additional services and generally more so than their BBC listening counterparts.

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



180. And as audio downloads.



G - What does the future hold for digital radio?

181. The new multiplex will help increase the amount of time spent listening to the radio. Of those who would choose to listen to new services:
- 49% would include the new stations into their listening repertoire by spending more time listening to the radio.
 - 32% would achieve this by listening less often to some of their current choice of stations.
 - 12% would stop listening to some existing stations in order to listen.
 - 52% of those who do not currently own DAB sets but who were interested in listening to the new services, would increase their overall radio listening to be able to listen to the services.
182. In relation to which stations people would listen to less (in order to accommodate the new ones):
- 53% would listen less often to some stations would do so by listening less to existing BBC services. In fact, 43% would only listen less often to BBC stations.
 - 50% would listen less often to commercial services and 36% less often to an ILR service. In relation to individual services, 30% mentioned Lincs FM, while 20% would listen less often to Radio 1. Radio 2 and BBC Radio Lincolnshire would be listened to less often by 14% and 13% respectively.
183. In relation to which stations people would cease to listen to:
- Almost half would stop listening to a BBC service, including Radio 2 (19%), Radio 5 Live (12%) and Radio 1 (10%).
 - 43% would stop listening to a commercial station, with just over a quarter saying they would stop listening to Lincs FM (equating to just 3% of the population).
184. If the new services were available today, the proposed services are likely to command c. 40% of time spent listening.
185. Among those who claimed not to listen to any radio at the moment (6.3% of respondents), after gaining some insight into what DAB might bring, 30% now said they might be interested in getting a digital radio in order to start listening. This could have the overall effect of increasing total radio reach in the market as well as total hours of listening.
- Men were a little more likely than women to express interest in buying a DAB set (49% v 41%).
 - There was above average interest too, among all age groups under 55.

H - Lincs FM listener survey

186. An online survey was undertaken with Lincs FM listeners through the Lincs website. The survey sought their views on the radio station, on the opportunities presented by digital radio and on their new media use. It was designed to accompany the more representative local study that we commissioned. A total of 443 respondents completed the survey.
187. The study showed the heritage that Lincs FM listeners have with the station, with 84% having listened for more than two years. The reasons for tuning in were the music (62%), the mix of music, news and information (58%) and the presenters (also 58%). Essential information was deemed important, with 36% and 40% wanting travel and local news respectively.
188. Not unexpectedly, the Lincs FM listener also listens to Radio 1 and Radio 2. As much of the TSA does not have access to local digital radio services, DAB listening amongst these listeners is currently relatively low, with only 13% having tuned in this way. Analogue radio consumption matches the national RAJAR pattern with over 90% tuning in on AM or FM and just 3%, 6% and 8% tuning in through cable, satellite and Freeview respectively.
189. In relation to new services, the Lincs FM listener is keen to hear other mainstream stations, with a strong desire for AC and melodic easy listening services. In addition, more niche services, such as for young adults and country music were sure to find audiences.
190. It also seems that listeners will be supporting MuxCo's innovations on digital radio with 30% liking an EPG and 14% wanting to download programmes and podcasts through their radio.
191. Whilst it appears that DAB take-up among Lincs FM listeners is low at the moment, they appear not to be dismissive of new technology, with over 27% of those surveyed having profiles on social network Facebook and 17% the more music-driven MySpace. The addition of Lincs FM being able to promote DAB across their whole area is sure to raise the penetration of the platform.

Overall conclusions from our research

192. We believe that our research findings have given the citizens of Lincolnshire an opportunity to shape their radio choice for the future. The area already commands an above average level of DAB ownership and the proposed new radio choices will help erode the BBC dominance in this market.
193. 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.
194. Overall, we are confident that our research demonstrates that our services are demanded, will increase choice and will 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.

195. 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. We have assessed interest in existing services through RAJAR, and both existing and new through our commissioned research. Through this research (detailed in Q.14), demand for each format was evaluated, both individually and collectively on the basis of the chosen complement of services. Our research also evaluated interest in digital radio and the key drivers for the new technology, over and above pure choice of formats.

Local Consultation

196. We have consulted with MPs and local councillors as to their views of the issues that the county is likely to face over the next 10 years and how radio can assist. We have also discussed the DAB opportunity with a number of local organisations and individuals to make sure that the opportunities to broadcast as full services or as part of the Podcast Service are recognised, and to build local relationships. We have also sought feedback from the listeners of Lincs FM through the station's website.

Research

197. We will undertake on-going consumer research during the licence term. 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 take-up, 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

198. 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

199. MuxCo Lincs will be served by a website at 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.
200. In addition, the site promotes DAB digital radio and 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.
201. Whilst a local multiplex is a virtual company, there is still a 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".

202. Our intention to apply for the licence has been documented on our website (www.muxco.com), which has provided an opportunity for prospective applicants to register their interests.
203. 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.
204. Following the advertisement of the licence opportunity, we contacted the identified local analogue licensees 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.
205. 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.
206. Headline terms including approximate carriage costs have been supplied to the proposed service providers.
207. During the licence period a similar process will be adopted, with a standard questionnaire being used to assess applicants.
208. During the application process, we have engaged with all potential service providers in an open and non-exclusive manner.

Fair and Effective Competition during the Licence Period

209. 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 audience or revenue.
210. 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.

211. 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.

212. 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-labeled 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.

213. Increased choice of popular quasi-national and more local brands is a strong driver for the purchase of DAB receivers. When allocating capacity, we have sought to achieve an optimum balance between existing and new services, quasi-national and local, 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.
214. We are aware of a number of recent listening tests undertaken to evaluate the latest 'state of the art' MPEG 1 Layer II audio codec. These tests demonstrated that there was only slight degradation (1.7 points on the ITU scale).
215. 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 Midnight	Midnight to 6am
BBC Lincolnshire	MPEG1L2	UEP3	128	128
Lincs FM	MPEG1L2	UEP3	128	128
Compass FM	MPEG1L2	UEP3	128	128
Lincs Country	MPEG1L2	UEP3	128	128
Easy Radio	MPEG1L2	UEP3	96	96
Shuffle	MPEG1L2	UEP3	128	128
UCB	MPEG1L2	UEP3	64	64
Traffic	MPEG1L2	UEP3	48	48
Podcast Service	AAC	EEP3A	16	80
Data	DATA	EEP3A	56	8
EPG	EPG	EEP3A	8	8
Total			928	944
<i>Allocated as % Total</i>			<i>81%</i>	<i>82%</i>
<i>Data as % Total</i>			<i>7%</i>	<i>8%</i>

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

CUs Allocation	Service Type	UEP	6am to Midnight	Midnight to 6am
BBC Lincolnshire	MPEG1L2	UEP3	96	96
Lincs FM	MPEG1L2	UEP3	96	96
Compass FM	MPEG1L2	UEP3	96	96
Lincs Country	MPEG1L2	UEP3	96	96
Easy Radio	MPEG1L2	UEP3	72	72
Shuffle	MPEG1L2	UEP3	96	96
UCB	MPEG1L2	UEP3	48	48
Traffic	MPEG1L2	UEP3	35	35
Podcast Service	AAC	EEP3A	12	60
Data	DATA	EEP3A	42	6
EPG	EPG	EEP3A	6	6
Total			695	707

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?

217. 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
218. 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.
219. NGW has 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 Lincs 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.
220. 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.
221. We note that the WorldDMB Forum has now released the DAB⁺ 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⁺ services on the Lincolnshire multiplex.
222. 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 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
BBC Lincolnshire	MPEG1L2	Stereo	Full Rate	UEP3	48kHz UEP3 Stereo
Lincs FM	MPEG1L2	Stereo	Full Rate	UEP3	48kHz UEP3 Stereo
Compass FM	MPEG1L2	Stereo	Full Rate	UEP3	48kHz UEP3 Stereo
Lincs Country	MPEG1L2	Stereo	Full Rate	UEP3	48kHz UEP3 Stereo
Easy Radio	MPEG1L2	Mono	Full Rate	UEP3	48kHz UEP3 Mono
Shuffle	MPEG1L2	Stereo	Full Rate	UEP3	48kHz UEP3 Stereo
UCB	MPEG1L2	Mono	Full Rate	UEP3	24kHz UEP3 Mono
Traffic	MPEG1L2	Mono	Half Rate	UEP3	24kHz UEP3 Mono
Podcast Service	AAC	Mono or Stereo	Full Rate	EEP3A	48kHz EEP3A Mono / Stereo

223. The Podcast Service will be licensed under a DSP 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.
224. 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.

225. MuxCo Lincolnshire Ltd is not aware of any issues which would prevent the award of a licence to the company.