



MuxCo Hereford & Worcester Ltd

**An application to Ofcom for the
Herefordshire & Worcestershire
Local digital radio multiplex**

June 2007

Executive summary

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

The strategy behind a new local multiplex business

1. MuxCo was formed to address the concerns of many radio operators that, to date, local DAB digital radio has been established under a model that benefits is cost prohibitive. As such, there has not been the incentive to contract for long term, high cost digital carriage, despite the 'bonus' of an automatic analogue licence renewal. This is particularly true for smaller radio businesses. Indeed, many have questioned whether there is a digital future for smaller radio services, and if so, whether it requires alternative technologies to DAB.

MuxCo proposes a different business model for the new local DAB multiplexes – a co-operative model that involves as many radio groups and like minded organisations as possible who wish to establish a broadcast future. By working with these companies, as shareholders and service providers, MuxCo is able to help them secure a stake in the digital future and to take a direct ownership position in the development of DAB, which, until now, has been dominated by the larger radio groups. MuxCo also enables shareholders to make the move to digital in a time scale which they choose, rather than one which is forced upon them, without concerns that if they do not act now, they may miss the opportunity.

The overarching principle of MuxCo is to maximise the success of local multiplex businesses with whom it will partner, by ensuring certain key criteria are met:

- Helping to deliver a strong consortium of partners and complement of service providers
- Providing the local partners with access to a credible management team with a proven track record
- Preparing well researched and supported licence applications
- Delivering a sound and commercially prudent transmission solution

MuxCo Hereford & Worcester Ltd

2. The applicant company is MuxCo Hereford & Worcester Ltd (which for ease of reference in the application is referred to as 'MuxCo H&W'). The shareholders in this company are:

- Murfin Media Ltd 33.3%
- Town & Country Broadcasting Ltd 33.3%
- MuxCo Ltd 33.3%

The Proposed Services

3. The focus of our proposals is 'local, local, local'. We are aware that other multiplex operators have tended to offer a range of existing analogue services (mainly their own) and then to provide a number of new digital only services, which generally form part of quasi-national networks and have little (if any) relevance to the local area.

We believe that local radio has a strong commercial future – there will always be demand for locally focused services providing local news and information, as well as satisfying local advertiser interests. We therefore believe that it is important for multiplexes 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.

Spectrum has been allocated to accommodate the following local analogue services in stereo from launch:

- Wyvern FM
- Sunshine 954 / 1530
- BBC Hereford & Worcester

And for 6 new exclusive digital services that will further broaden consumer choice:

- Smithy Rock – a Midlands based classic rock service
- Shuffle – a service comprising music and listener-generated content for teenagers and young adults
- Local Live – a speech rich service
- Easy Radio – an easy listening melodic music service
- UCB UK – a Christian music and speech service
- Traffic Radio – a traffic and travel service

In addition, there is sufficient capacity to launch additional audio services during the licence period.

Capacity has also been allocated for the provision of DLS and EPG at launch, as well as for the development of innovative data services.

The Winning Criteria

4. We believe that MuxCo H&W is in a unique position to introduce and support DAB digital radio across Herefordshire and Worcestershire for the following reasons:

The extent of the coverage area proposed to be achieved by the applicant

5. On the basis of our market analysis, we have adopted a prudent approach to the development of the multiplex. Our proposed plan will deliver solid coverage within a realistic and sustainable business plan. At launch, we will deliver outdoor coverage of 79.7% within the PPA, and indoor coverage of 66.6%. We would look to introduce additional transmitters during the licence period to increase coverage in a commercially viable manner.

The timetables proposed by the applicant for achieving the stated coverage (i.e. transmission roll-out) and for the commencement of broadcasting of the services proposed

6. It is our intention to launch with 3 transmitters in September 2008, with a minimum of 8 services. The launch of MuxCo H&W will be close to that of the second national commercial multiplex. As a result, the launch marketing activity of that multiplex will generate a considerable level of public interest in digital radio within this area. We believe that we will be able to capitalise from some of this promotional activity, and that this will complement our local marketing activities.

The ability of the applicant to establish the proposed service and to maintain it throughout the licence period

7. MuxCo H&W's shareholders represent a mix of local established companies, ambitious and developing media companies with interests in other areas and companies with substantial digital radio experience. The shareholders are committed to investing significant resource to underpin the business plan.

The integrated relationship that the shareholders will have with the multiplex, in relation to the provision of audio and data services, as well as the development of commercial opportunities, provides further financial comfort (for both sides), and helps demonstrate our ability to establish and maintain the proposed selection of services throughout the licence period.

Through the multiplex management team and our transmission provider, we have unparalleled knowledge and experience in the establishment and operation of local multiplexes. Our business planning assumptions, in relation to revenue potential and costs, are robust and we believe that we have adopted a prudent approach to multiplex planning, one that supports and rewards all radio operators, strengthening DAB digital radio's ongoing position.

The extent to which the digital sound programme services (other than BBC services) proposed to be included in the service would cater for local tastes and interests, general or particular

8. We will provide capacity for existing local analogue licensees to broadcast in stereo, and will launch 6 digital services that will be new to the area. Carriage of existing services helps promote digital radio and drive listeners from analogue to digital. New digital services help broaden choice and provide further incentives for consumers to buy a DAB digital radio. Our proposed new services will significantly broaden choice, in particular 'Local Live' which brings a commercial speech-rich service to this area and strong competition for the BBC. This service, as well as being a source of information, will provide opportunities for local residents to air their views and comments. Collectively our proposed digital services appeal to 77% of the adult population.

The extent to which any such digital sound programme services would broaden the range of programmes available in the area by way of local digital sound programme services, and the extent to which they would cater for tastes and interests different from those already catered for by local digital sound programme services provided for that area or locality

9. The H&W multiplex is overlapped by MXR's West Midlands multiplex (38% adult PPA) and by CE Digital's Birmingham multiplex (23% adult PPA). These overlaps are in the North East of the H&W PPA area, and concentrate on the population centres of Bromsgrove, Redditch, Kidderminster and Bewdley. In relation to the majority of the H&W multiplex area, and the principal centres of Hereford and Worcester, the new H&W multiplex is the only true local multiplex in the area. Our proposed services will individually and collectively broaden choice.

The extent to which there is local demand or support for the proposed service

10. Our specially commissioned consumer research has allowed us to actively engage with the statutory criteria and measure local demand for our proposed stations. It has highlighted the strong interest in the services that we propose to carry.

Whether, in contracting or offering to contract with persons providing digital sound programme services or digital additional services, the applicant has acted in a manner calculated to ensure fair and effective competition in the provision of such services

11. 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.

The multiplex will launch with some spare capacity, providing the opportunity for existing operators, or indeed new ones, to launch digital services in the area.

Summary

12. We believe that MuxCo H&W will be the most credible operator for the Herefordshire and Worcestershire multiplex.
- The consortium has analysed the market fully with specially commissioned digital research, alongside the more traditional RAJAR analysis, identifying and helping deliver the services that we have proved will truly appeal to H&W's tastes and interests.
 - The consortium is committed to ensuring that local digital radio is a success in this area.
 - Members of the consortium have an unparalleled track record in applying for and successfully operating local multiplexes.
 - Members of the consortium have an impressive track record in operating local stations across the area. This management expertise will be invaluable to the multiplex, as well as assisting the development of new programming streams to encourage the broadening of choice.
 - The multiplex is well resourced, in terms of both management and finances.

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 Hereford & Worcester Ltd

Registered Number 6204642
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.

13. The transmission proposal is designed in conjunction with National Grid Wireless ('NGW') to provide good overall coverage across the licensed area, including urban areas and main road links. Careful consideration has been given to the design requirement to maximise received field strength within the licensed area in the built up areas, while meeting national and international co-ordination limits.

The total adult population within the PPA is calculated by NGW to be 601,194 (this is close to Ofcom's calculation of 586,300).

MuxCo H&W has adopted a prudent approach to the development of this multiplex, reflecting the market and its economics. We therefore propose to launch with 3 transmitters, which will provide:

- Outdoor population coverage of 479,018 adults (aged 15+), which equates to coverage of 79.7% of the population within the PPA.
- Indoor population coverage of 400,316 adults, which equates to coverage of 66.6% of the population within the PPA.

The opportunity to implement additional transmitter sites to extend coverage in an economically viable manner will be reviewed during the licence period.

Standalone Coverage

14. The following table shows the coverage 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: Indoor	Percentage Licence Area	Standalone Coverage: Outdoor	Percentage Licence Area
Bromsgrove	208,696	34.7%	292,966	48.7%
Ridge Hill	122,287	20.3%	179,397	29.8%
Malvern	70,449	11.7%	112,734	18.8%

Cumulative Coverage

15. The table below shows how the overall PPA coverage is achieved up through the use of a network of transmitters.

Transmitter Site	Cumulative Coverage: Indoor	Percentage Licence Area	Cumulative Coverage: Outdoor	Percentage Licence Area
Bromsgrove	208,696	34.7%	292,966	48.7%
+ Ridge Hill	342,039	56.9%	449,213	74.7%
+ Malvern	400,316	66.6%	479,018	79.7%

Network Resilience

16. The following table shows the impact from the loss of one transmitter at a time, demonstrating its contribution to the overall network.

Transmitter Site	Cumulative Coverage Loss: Indoor	Percentage Licence Area	Cumulative Coverage Loss: Outdoor	Percentage Licence Area
Bromsgrove	192,635	32.0%	181,388	30.2%
Ridge Hill	124,225	20.7%	135,900	22.6%
Malvern	58,277	9.7%	29,805	5.0%

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.

17. We believe that an early launch of the multiplex brings the greatest possible advantage to the development of the digital radio audience in the area. We therefore propose to launch all three proposed transmitters in September 2008, delivering coverage of 79.7%.

Contingent arrangements have been made with NGW to ensure that this launch date can be achieved. In making our assertion on timing, we have assumed that the multiplex award would be by October 2007.

We wish to reserve the right to consult with Ofcom during the licence term to examine opportunities to increase population coverage in an economically viable manner. We have identified three sites for potential future network enhancement:

- Headless Cross to improve coverage for Redditch
- Wood Norton to improve coverage for Evesham and Pershore
- Gatley Long Coppice to improve coverage for Leominster and surrounding area.

At present, these transmitters are not planned and no date is proposed when these enhancements might prove feasible within the business plan. We acknowledge that these transmitter sites are not on the current Reserved Assignment List and a full ACI impact assessment would be undertaken if we wished to implement these sites, in accordance with the current Memorandum of Understanding.

Antenna Systems and Combiner

18. NGW is the owner of two of the required antenna systems. NGW has received offers for the major requirements at the remaining site where antenna systems are controlled by Arqiva. Discussions on the combiner supply have taken place between NGW and Arqiva Network Access, and we are advised that no obstacles are expected to meeting the timetable for launch.

Transmitter systems

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

Distribution

20. The distribution between the multiplex centre and the transmitters will be contained on an NGW SHF link circuit and a BT circuit. NGW can confirm that it is able to install the new SHF link within the timescale of the transmission roll-out.

Accommodation and Power Requirements

21. NGW Network Access has confirmed that it can provide suitable accommodation and power supply at two of the sites and of the remaining site, NGW Network Access has negotiated new or modified accommodation and power supply agreements.

6. Detailed coverage proposals

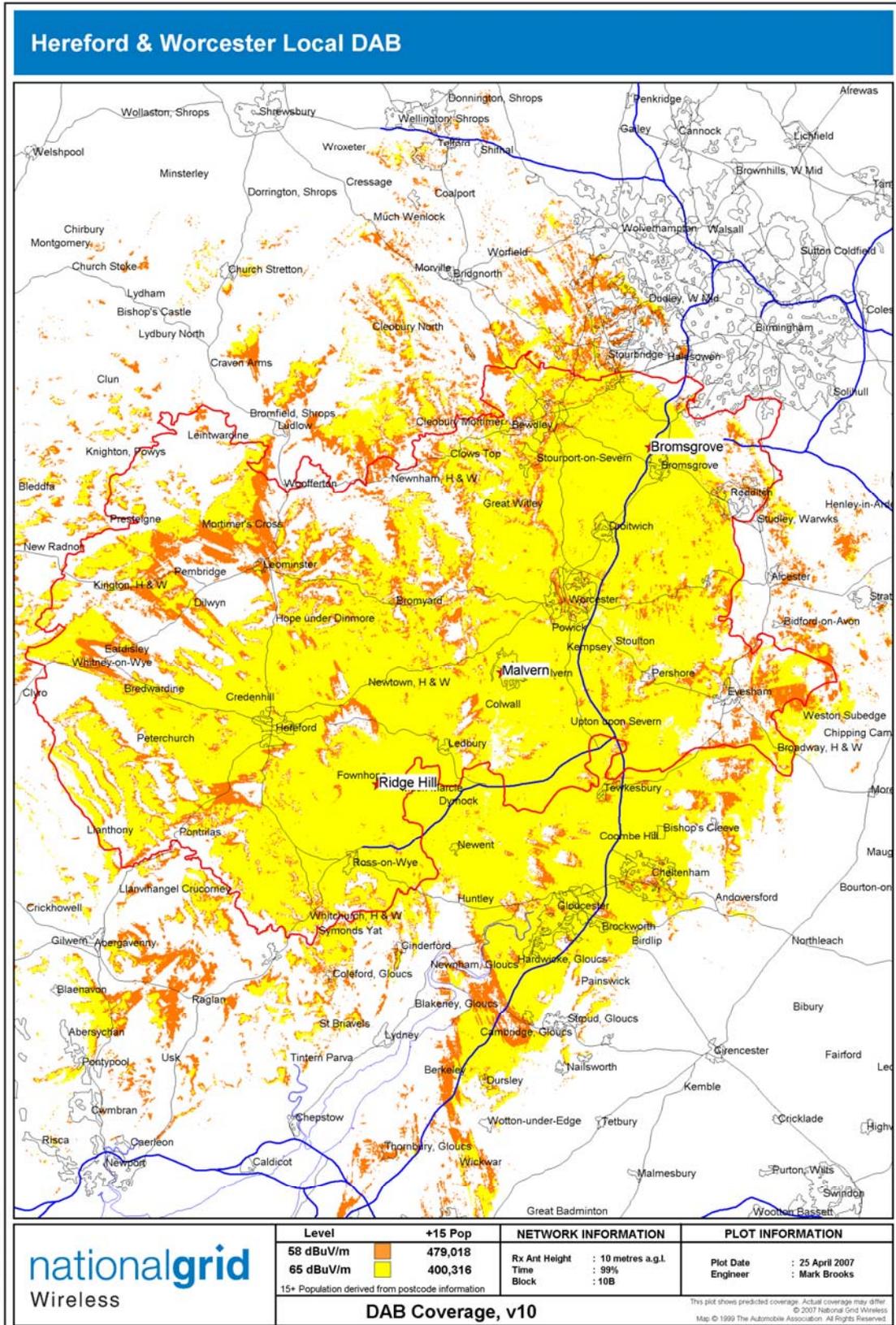
Provide, in an electronic text file, details of the technical plan, which should consist of the following components: assignment details, implementation table, and implementation data.

- 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 ASCII 97 defined by the European Radiocommunications Office – the Wiesbaden 1995 Plan management body.
22. The assignment details accompany this application are provided under separate cover as an electronic text file.

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

Site Name	NGR	Date of Implementation	Owner/lessor of aperture space on mast/tower	Antenna height (metres)	Notes
Bromsgrove	SO 9476 7301	Sept 2008	NGW	39	NGW has an offer from NGW Network Access to share the existing Digital Radio antenna and NGW Network Access will provide a combiner at this site.
Ridge Hill	SO 6300 3330	Sept 2008	Arqiva	127	NGW has an offer from Arqiva Network Access to share the existing Digital Radio antenna and Arqiva Network Access will provide a combiner at this site.
Malvern	SO 7750 4640	Sept 2008	NGW	27.5	NGW Network Access will provide 2 tiers of new cardioid antennas.

The map on the following page highlights proposed 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**

23. The following image details the proposed new antenna at the Malvern transmitter site. Existing antennas will be used at Bromsgrove and Ridge Hill, and as such no images are provided.

Malvern



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

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

Site Name	Antenna System	Antenna Height (m)	Antenna Owner Permission	Accommodation Permission	Power Supply	Impacted By DSO
Bromsgrove	Existing National DAB Antenna.	39	NGW Network Access	NGW Network Access are providing accommodation in the existing NGW Area	To be provided by NGW Network Access	See Note 1
Ridge Hill	Existing National DAB Antenna.	127	Arqiva Network Access	NGW Network Access are providing accommodation in the existing NGW Area	To be provided by NGW Network Access	See Note 1
Malvern	New 2 tier Cardioid Antenna	27.5	NGW Network Access are to provide the new antenna system.	NGW Network Access are providing accommodation in the other users Area	To be provided by NGW Network Access	See Note 1

Note 1

The DSO (Digital Switch Over) planning programme is ongoing with Antenna Design Proposals being formally agreed by all television broadcasters and Managed Transmission Suppliers. These are being systematically defined and issued in accordance with the DSO planning programme. Whilst the precise impact of DSO cannot be determined at present at these sites, NGW working with Arqiva has assured us that they will endeavour to minimise the impact on both the rollout and operation of the new DAB service for Herefordshire and Worcestershire.

d) Provide the following details regarding transmission arrangements:

- i) Any transmission contracts that have been agreed
- ii) The status of these agreements

25. Transmission Contracts - In the event of winning the licence, NGW will undertake the provisions for transmission and multiplexing.

Status - 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.

26. 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).

27. It is envisaged that 2 commercial analogue services and 6 digital services will broadcast from the start of the radio multiplex licence period.

Reflecting that Local Live will be a new speech rich service, it is anticipated that this service will launch within 9 months of the multiplex's commencement.

In addition, we will provide the reserved capacity for BBC Hereford & Worcester.

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.

28. 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.

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

Gregory Watson

Occupation:
Managing Director

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

Other Media Interests:
None

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

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

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

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

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

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

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

Muff Murfin

Occupation:
Company Director

Directorships:
Murfin Media Ltd, Radio Maldwyn Ltd, Classic Hits Radio Ltd, South Shropshire Communications Ltd, Mansfield & Ashfield Broadcasting Company Ltd, Worcester Live Ltd, Q Records Ltd, Aston FM, Midland Radio Orchestra Ltd, Plusable Ltd

Other Media Interests:
None

Muff Murfin trained originally as a teacher in the sixties but has been involved in the radio and music business since the seventies. He entered the radio business as a disc jockey on BBC Radio Birmingham's "DJ for a day" competition.

In 1981, Muff was a member of the consortium that won the radio franchise for Hereford and Worcester, and served as a director and consultant for Radio Wyvern during its early years.

In 1993, Muff took over the troubled Birmingham incremental station Buzz FM, and a year later bought Radio Harmony in Coventry and re-launched the station as Kix 96 (which was sold to CN Group in 2001). He was a director and founder shareholder of The Bear in Stratford-upon-Avon which launched to success in 1996.

In 1997, he became a director and major shareholder of Sunshine 855. After re-financing the company he purchased new premises and he designed and built new studios and facilities. Also in 1997, he was invited to become a major shareholder in Radio Maldwyn, a station in mid-Wales owned at the time by over 200 shareholders and running as a Friendly Society. Muff re-launched the station with his own finance and new management.

In 1998, he became a director and significant founding shareholder of Mansfield 103.2fm. He is now Chairman and majority shareholder. In 1999, Muff purchased Classic Gold in Herefordshire and Worcestershire from GWR Group. After building new studios he moved the station to the new site adjacent to the AM transmitter site in Worcester. The station subsequently re-launched as Classic Hits. In 2006, Muff sold Classic Hits and Sunshine 855 to Laser Broadcasting Ltd, a company in which he remains the largest individual shareholder.

In 1977 Muff built The Old Smithy Studios in the grounds of his home, and which have been used by many legends of rock. In addition, Muff has written and performed and provided a wide range of music of music for advertising, radio and television programmes, including the theme music of ITV's "The Gladiators", "You Bet" and many other programmes. His jingles have run on major radio stations in the UK and around the world. He owns a radio commercial production department within his recording complex.

Jason Bryant

Occupation:
Chief Executive, Town and Country Broadcasting

Other directorships:
Haven FM (Pembrokeshire) Ltd, Dee 106.3 Ltd, Radio Carmarthenshire Ltd, Town and Country Broadcasting Ltd, JB Consolidated Ltd, Bridge FM Radio Ltd, Swansea Bay Radio Ltd, South Wales Radio Ltd, North Wales Broadcasting Ltd, MuxCo Northeast Wales & West Cheshire Ltd

Other Media Interests:
None

Jason is a well-known and highly regarded radio entrepreneur with a rare mix of expertise across analogue and digital radio. He has a successful track record in launching and developing innovative and successful local commercial radio services, and has built Town and Country Broadcasting to become the leading Welsh-based media company, which is profitable and with an annual turnover nearing £3m. Jason is also a founding investor in Chester's Dee 106.3, which is also profitable and has achieved market leadership in an extremely competitive market.

Jason started his career at BBC Radio Solent where he worked across news and programmes, before moving to London's LBC as a producer and editor on a number of high-profile shows. He moved to television as a producer, working with Sir David Frost and GMTV, before returning to radio as a producer and editor at London's BBC GLR. In 1994, Jason moved to Scotland as the launch Programme Director for Scot FM, before heading back South to join Talk Radio, where he became Programme Director. He left the station in 1997 to work as a consultant with the management team at BBC Radio 5 Live.

Following Kelvin MacKenzie's acquisition of Talk Radio in 1998, Jason returned as Development Director, and subsequently Managing Director to re-launch the service as talkSPORT. He was subsequently appointed Managing Director of Development at talkSPORT's parent company TWG plc, where he oversaw a rapid growth in the company's activities, including several successful DAB multiplex licence applications in London and Scotland. Jason then joined SMG plc in February 2003 to lead its radio development projects and develop its DAB digital radio brands. Jason remains a consultant to Virgin Radio.

In 1999 Jason assembled the successful application team for the Pembrokeshire local radio licence and three years later repeated the success in Carmarthenshire. Notably, 102.5 Radio Pembrokeshire has one of the highest audience shares of any station in the UK, and Radio Carmarthenshire has recently been confirmed as the number one station in its area. Radio Pembrokeshire has won the prestigious Arqiva/CRCA Station of The Year award in 2005 and 2006, and Radio Pembrokeshire has also won a Silver Sony Radio Award as Station of The Year. In November 2005, Town and Country Broadcasting was awarded the new local licence for Swansea, which launched in November 2006, and last summer acquired the station for Bridgend, 106.3 Bridge FM, giving the group continuous coverage from the Pembrokeshire coast to Cardiff.

Deanna Hallett

Occupation:
Managing Director, Hallett Arendt

Directorships:
Hallett Arendt Ltd, Folder Media Ltd, MuxCo Ltd, MuxCo Home Counties Ltd, MuxCo Northeast Wales & West Cheshire Ltd

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

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

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

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

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

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

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

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

(b) Proposed Investors and Shareholding Structure

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

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

Shareholder	Shares	% Shareholding	% Loan stock
Murfin Media Ltd The Old Smithy 1 Post Office Lane Kempsey Worcester WR5 3NS	13,333	33.3%	33.3%
Town & Country Broadcasting Ltd Ashby House 64 High Street Walton On Thames KT12 1BW	13,333	33.3%	33.3%
MuxCo Ltd 96a Curtain Road London EC2A 3AA	13,333	33.3%	33.3%

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

30. 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.

31. See above.

vi) Outline any shareholders agreements or arrangements which exist.

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

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.

33. Further information on MuxCo Ltd is provided in Part B.

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

34. 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

Muff Murfin

Muff Murfin, through Murfin Media Ltd and direct has a 9.95% shareholder in Laser Broadcasting Ltd and interests in Radio Maldwyn Ltd and Mansfield & Ashfield Broadcasting Company Ltd.

Town and Country Broadcasting Ltd

T&C has interests in the following companies (all 100%) - Swansea Bay Radio Ltd, Haven FM (Pembrokeshire) Ltd, Radio Carmarthenshire Ltd, Bridge FM Radio Ltd.

Town and Country Broadcasting is 100% owned by Jason Bryant, who also holds a 27.17% personal investment in Dee 106.3 Ltd.

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 H&W

35. The strategy for MuxCo H&W can be summarised as:

- To create an environment that encourages businesses, both new and existing, local and national, to provide services on local radio.
- To establish an efficient, progressive business that reduces the burden, financial and operational, on smaller and new operators, letting them concentrate on expanding their core businesses. Something that will be achieved by working with well-respected experts in digital radio and multiplex management.
- To provide opportunities for all existing analogue broadcasters to switch to digital, either by providing simulcast or near simulcast services or creating new services that engage with the opportunities that DAB provides.
- To provide a good return on investment to shareholders, helping them grow their businesses.
- To re-emphasise local radio as an important part of radio's digital future.

The Shareholders and their Digital Strategies

36. **Town & Country Broadcasting Ltd ('T&C')** was established to build a local network of radio stations. It enjoys an excellent track record establishing and maintaining local radio licences and is committed to bring its creative, critical and commercial successes to digital radio. T&C aims to become the leading media group based in Wales. It has a strong commitment to local radio and whilst recognising the current difficulties that many local radio services face, has the confidence in the continuing value of localness. Jason Bryant also has a strong track record in digital radio, having helped create the local digital radio businesses for The Wireless Group and developing SMG's digital brands. Jason recognises the importance of DAB for all stations, and the opportunities it can provide for companies such as T&C.

In relation to digital, T&C's objective is to apply alongside MuxCo and partners for the new local multiplexes being advertised in and contiguous to Wales (like the H&W multiplex), and to develop a new local speech rich service that is distinctive and viable. T&C is also developing sales opportunities for new digital-only stations to be sold as a package to local and regional advertisers. Outside radio, T&C's strategy is to develop local media businesses that complement their traditional broadcast operations, including online local information sites and magazines. Through its participation in DAB ownership and its strong existing production resources, T&C is able to be more confident about the investment to launch Local Live, a speech rich service.

37. **Murfin Media Ltd** was established by Muff Murfin in 1997 to invest in radio and other media opportunities. Over the last decade, Muff has owned or had involvement in Kix 96, The Bear, Sunshine 855, Radio Maldwyn, Mansfield 103.2 FM and Classic Gold. Following disposals to CN group and Laser Broadcasting (in which he is the largest individual shareholder), Muff remains involved and committed to radio, with interests in Radio Maldwyn and Mansfield 103.2 FM, and is a director of the recently awarded FM licence for Herefordshire and Monmouthshire. Through his knowledge and experience of running profitable small scale radio services, as well as his extensive music background, Muff has recognised for some time the value and enormous opportunities that local DAB will offer in his home county. From the start, Muff's proposals for MuxCo H&W was not just as a shareholder, but to create a new radio station that reflects his, and the Midland's, passion for rock music.
38. **MuxCo Ltd** was established by Deanna Hallett and Gregory Watson to provide digital radio solutions to local radio companies. Its principle objectives are to help deliver efficient solutions to service providers on local multiplexes and economical benefits to their shareholders. MuxCo works with local partners to help encourage them to take a more active role in digital radio, from both a business point of view, as well as to the provision of services. It believes that more local choice of the right type will ultimately help drive the take-up of DAB. MuxCo also believes that there is a strong business model to be developed for truly local multiplexes - ones that provide a range of interesting services demanded by local residents. All too often, new digital radio choice has simply meant services that are nationally driven by the biggest groups; the re-broadcast of a quasi-national service into a local area, with no local marketing support or activity to build awareness or encourage trial. Introducing local broadcasters as shareholders provides greater incentives for these companies to invest in local digital radio programming and promotion. An added benefit to both the multiplex and the listener from the participation of such broadcasters is that, partly because of the limited resources they operate with, they are often at the more creative end of the radio spectrum. Further information on MuxCo is provided in Part D.

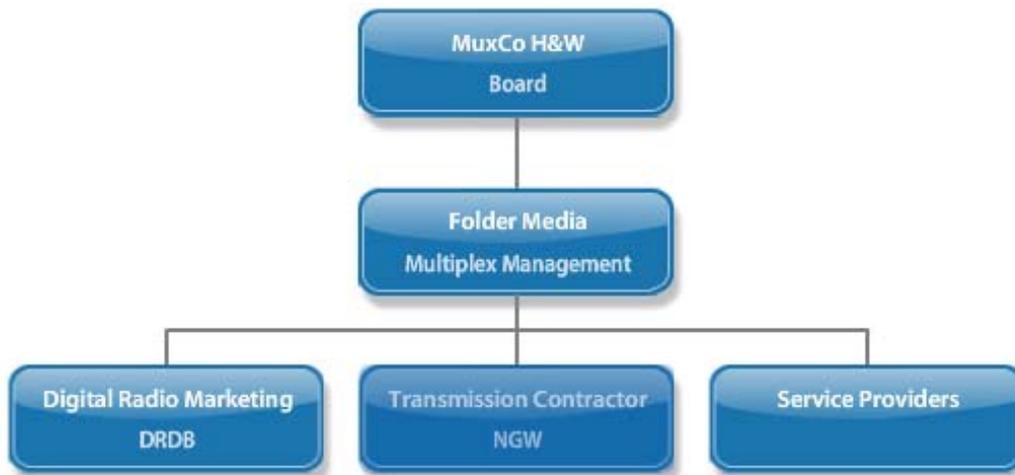
The Business and the Objectives

39. MuxCo H&W has established a business model that will drive the company to provide a premium digital radio service. Four key objectives have been identified that will ensure that this goal is achieved:
- To operate a multiplex that offers a wide choice of programme services which address local tastes and interests (as highlighted through specific research), broaden choice and increase plurality of ownership
 - 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 and providing access for all
 - To operate a sound financial business which is intrinsically linked to providing popular formats from a broad selection of service providers

MuxCo H&W is committed to ensuring that digital radio is successfully established. We are well resourced technically as well as financially to support the needs of the service providers.

MuxCo Hereford & Worcester Ltd

40. The chart summarises the reporting structure of the company.



41. The Board has responsibility for the company's business strategy; monitoring and reviewing trading performance; appointing and contracting with service providers; developing multiplex bandwidth policies; developing pricing structures; appointment and supervision of the Multiplex Manager and regulatory compliance. The Board will meet at least quarterly.

Folder Media Ltd

42. MuxCo H&W has appointed Folder Media to provide multiplex management services. Folder Media is a company that has unparalleled experience in the day-to-day management of successful local multiplexes. Further information on Folder Media is provided in Part D.

(i) The network construction phase

43. The network construction phase includes three stages – planning, building and testing. MuxCo H&W will contract with NGW to provide a transmission solution, and on the basis of this commitment, NGW will fund the capital expenditure and installation of the infrastructure.

NGW has provided strategic support during the planning stage of the application and will liaise with Ofcom for transmission matters on behalf of MuxCo H&W.

As an established and respected transmission service provider, NGW have considerable existing 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 H&W 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.

(ii) The operational start-up phase

44. The operational start-up phase includes contracting with service providers, liaising with Ofcom over the build process, ensuring regulatory issues are followed, including the issuing of DSPS licences, and liaising with the DRDB and service providers on marketing activity.

As multiplex manager, Folder Media will be responsible to the 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; overseeing the testing of audio and data services; 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 and helping develop new revenue streams.

(iii) Marketing

45. We believe that despite DAB digital radio having been 'live' for 8 years, by the time MuxCo H&W launches, there is still a considerable lack of understanding by the public of the benefits of the DAB, something that needs to be addressed. We recognise that as a sole body, our voice will be too small and inefficient. We will therefore seek to join the DRDB (or any successor) and will actively support industry-wide generic promotion of digital radio.

We will also work closely with our service providers to help co-ordinate the locally focused marketing of digital radio generically, as well as of the services on the multiplex, with advice provided where relevant by Folder Media. In addition, service providers are likely to undertake their own brand marketing highlighting their appearance on DAB. We also wish to work with our service providers, particularly those that currently broadcast on analogue locally, to use airtime to promote DAB digital radio in a consistent manner across all MuxCo partner stations.

In order to fund membership of the DRDB, a contribution proportional to contracted capacity, will be levied at cost on service providers from the month following the launch of the multiplex.

We believe that for listeners, multiplex owner identity is of little or no importance (and is potentially confusing). We will work with the DRDB to use a national through-the-line identity and graphic style that makes both digital radio and station brands the 'heroes'.

(iv) Ongoing operation of the service

46. Folder Media will provide ongoing management cover for the multiplex, including purchase and sales ledgers, IT, secretarial, legal, marketing co-ordination and technical support.

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 H&W and service providers, will be to help educate and inform listeners and advertisers, as well as equipment retailers.

(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.

47. Letters of investment are provided in Part B.

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

48. Recent accounts for the shareholders have been provided 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.

49. 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 entitled

“Financial Template for DAB Local Radio Multiplex Licence Applications” 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.

50. 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

51. MuxCo H&W proposes that the TSA applicable to the multiplex is akin to that of BBC Hereford & Worcester, which currently researches on an adult population of 510,000. Whilst lower than both Ofcom's and NGW's calculation of adults within the full PPA, it corresponds closely to the PPA coverage that will be achieved with the 3 proposed transmitters.

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

52. The following table summarises our projections for audience ratings for the simulcast analogue services and digital only services. In relation to the analogue services, we have forecast their total hours across both analogue and digital platforms, and then highlight their digital hours generated through the multiplex.

	Year 1	Year 2	Year 3	Year 4
Wyvern FM				
• Weekly Reach %	18.0%	17.9%	17.8%	17.7%
• Ave Hours	7.3	7.2	7.1	7.0
• Total Hours '000s	670	657	645	632
• Digital Hours '000s	78	104	115	125
Sunshine 954 / 1530				
• Weekly Reach %	4.0%	4.1%	4.3%	4.5%
• Ave Hours	7.0	7.5	7.8	8.0
• Total Hours '000s	143	157	171	184
• Digital Hours '000s	33	50	61	73
Smithy Rock				
• Weekly Reach %	2.0%	2.3%	2.5%	2.6%
• Ave Hours	4.0	4.4	4.6	4.7
• Total (& Digital) Hours '000s	41	52	59	62
Shuffle				
• Weekly Reach %	1.2%	1.8%	2.1%	2.3%
• Ave Hours	4.0	4.4	4.6	4.9
• Total (& Digital) Hours '000s	24	41	49	57
Local Live				
• Weekly Reach %	1.5%	2.0%	2.3%	2.6%
• Ave Hours	4.0	4.4	4.6	5.2
• Total (& Digital) Hours '000s	31	45	52	69
Easy				
• Weekly Reach %	1.5%	2.1%	2.5%	2.8%
• Ave Hours	4.0	4.4	4.5	4.8
• Total (& Digital) Hours '000s	31	47	57	69
UCB UK				
• Weekly Reach %	1.3%	1.5%	1.7%	2.0%
• Ave Hours	4.0	4.5	5.0	5.5
• Total (& Digital) Hours '000s	27	33	44	56
Traffic Radio				
• Weekly Reach %	1.0%	2.0%	2.8%	3.0%
• Ave Hours	1.5	2.0	2.1	2.2
• Total (& Digital) Hours '000s	8	20	29	34

- 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	510	510	510	510
All radio hours '000s	10,641	10,526	10,434	10,390
All digital radio hours '000s	2,483	3,333	3,735	4,123
All digital hours as % of all radio hours	23.3%	31.7%	35.8%	39.7%
MuxCo H&W multiplex hours '000s	273	392	467	546
MuxCo H&W multiplex hours as % of all radio hours	11.0%	11.8%	12.5%	13.3%

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

Audience projections for programme services

53. In estimating audiences, we have based our assumptions on RAJAR within the BBC Hereford & Worcester TSA, which has a slightly larger analogue footprint compared to Wyvern FM (Sunshine 954 / 1030 does not take part in RAJAR). It also fits closely to the proposed PPA coverage.

We have reviewed the performance of individual services within this TSA, and on our consumer research findings with regard to the non-RAJAR researched services and the proposed digital only services.

Projections for the total weekly number of listening hours

54. 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:

- 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

55. The BBC Hereford & Worcester TSA currently delivers a 510,000 adult population. We have reviewed RAJAR data within this TSA using rolled 12 month data over the past three years. Whilst we believe there will be population growth, we have held the population as a constant for the first four years of the licence period.

Total Radio Listening

56. The combined RAJAR analysis highlights that all radio reach has been constant, with 2006 showing a small increase. Average hours of listening have also been constant, although 2006 shows a slight decline.

Historical Average Hours Performance

	2004	2005	2006
Population '000s	510	510	510
Reach %	87.5	87.4	88.0
Reach '000s	443	438	449
Total Hours '000s	10,670	10,736	10,690
Ave. Hours	24.1	24.5	23.8

57. Whilst we believe that increased radio choice will help stimulate the total market, a view confirmed by our consumer research, we believe it prudent to forecast some decline both in the penetration of all radio and average time spent listening. Competition from a wide range of new media, ranging from more TV choice, mobile phone services and the internet will all impact, especially on younger listeners

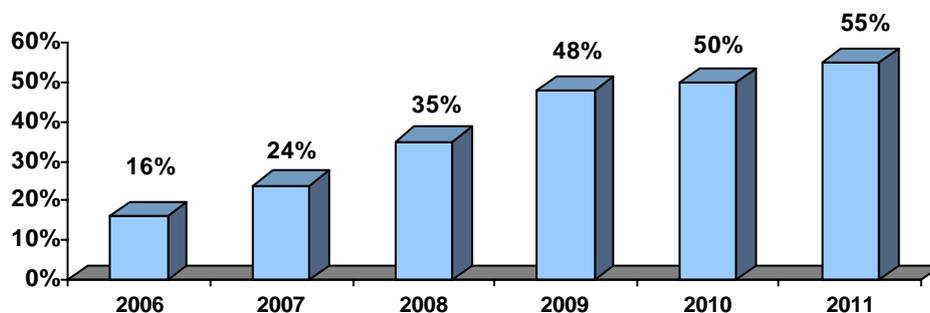
Projected Average Hours

	Year 1	Year 2	Year 3	Year 4
Population '000s	510	510	510	510
Reach %	88.0	87.5	87.0	87.0
Reach '000s	449	446	444	444
Total Hours '000s	10,641	10,526	10,434	10,390
Ave. Hours	23.7	23.6	23.5	23.4

Digital Share of Listening

58. 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.

Our penetration growth forecasts are based on the DRDB's 5 year forecast (published September 2005), which we have up-weighted using the known 2006 penetration data, and then carried forward the forecast growth on the basis of this new base. By 2010, the updated DRDB forecasts show DAB household penetration to have increased to 50%. This is summarised in the following chart.



We are comfortable with the DRDB forecasts:

- The latest sales data from the DRDB is that by the end of December 2006, 4.4m DAB sets had been sold, with December sales representing 26% of the total radio market.
- 72% of the population are reported to be aware of DAB digital radio (source IPSO MORI Tracker Jan 07)
- Latest RAJAR data (Q1 2007) highlights digital penetration at 19.5%.

This suggests that the DRDB forecast is on target and possibly likely to be exceeded. Our consumer research suggests that penetration of DAB digital radio in this area is significantly higher than the UK average. However, for prudent planning purposes we have used the UK figures.

We also note Ofcom's research and forecast in the share of listening between platforms. In the 'Future of Radio' published in April 2007, Ofcom highlights that digital listening is currently 13.6% and is growing at around 8% a year, and forecasts that by 2008 a third of listening will be to digital, and that by 2010 this should be 50%.

We have also had access to the long-term digital listening modelling undertaken by NGW as part of their national multiplex application. In particular, we have used their forecasts for digital share of listening as the starting point for calculating digital listening within the H&W area.

Our own consumer research showed that DAB digital radio ownership is 25%, with a further 4% being able to access a DAB radio. This figure would suggest that the H&W area is slightly ahead of the UK average

The relative market shares of the radio sectors

59. We looked at the individual 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.

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, 2009 (the first full year of MuxCo H&W) and 2012. This analysis enabled us to establish a view on the overall radio market within H&W and the changes that each sector would experience. The detailed workings behind these numbers are provided in Part B.

	Analogue Stations 2006	Digital Stations 2006	Digital Stations 2009	Relative share 2006	Relative share 2009	Relative share 2012
BBC Network	5	6	6	53.5%	49.7%	47.4%
BBC Local	3	0	1	13.0%	13.4%	12.0%
INRs	3	5	15	11.8%	13.0%	15.3%
ILR H&W	5	0	6	9.8%	11.6%	12.0%
Out of area ILR **	7	10	10	10.6%	10.9%	12.1%
Other	-	-	-	1.5%	1.4%	1.1%
Total				100.0%	100.0%	100.0%

** only audible in the North East of the TSA

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

11. Proposed digital sound programme services

60. MuxCo H&W's proposes to launch with 7 commercial audio channels, comprising 2 existing analogue services and 5 digital only services, along with BBC Hereford & Worcester. An 8th commercial (digital only) audio service would launch within 9 months. All existing analogue services will be offered the opportunity to broadcast in stereo; an important requirement highlighted by our specially commissioned research.

- Wyvern FM
- Sunshine 954 & 1530
- BBC Hereford & Worcester
- Smithy Rock
- Shuffle
- Local Live
- Easy Radio
- UCB UK
- Traffic Radio

Further information on these opportunities is provided in a confidential additional response to Q.19 contained within Part B.

Unallocated capacity will enable further new audio services to launch during the licence period, as well as allowing existing services to upgrade to stereo. These will be allocated according to our fair and effective policies, and will be subject to Ofcom approval.

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

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/>.

Wyvern FM

Format	Contemporary Hit Radio
Licence Description	A simulcast of Wyvern FM; a contemporary chart music station for the Hereford & Worcester area, broadcasting predominantly current chart hits, new releases or hits up to 10 years old. Speech will feature news and information relevant to its target audience.
Fuller Description	The majority of the music output is current chart hits and new releases or hits up to ten years old. Wyvern FM is music led, with news, information and features of particular local relevance broadcast throughout programming.
Unique Area Content	A local service for the area
Music to Speech	Minimum 85% music and 10% speech
Hours of Broadcast	24



Sunshine 954 / 1030

Format	Gold
Licence Description	A simulcast of Sunshine 954 / 1030, a classic pop hit led service targeted primarily at over 40s. Speech includes news and information relevant to its target audience.
Fuller Description	Targeted principally at 40 plus age group, music consists predominately of hits from the period 10 to 45 years prior to broadcast. Hits less than 10 years old are limited to 15% of music output. Local and national news is featured alongside local information.
Unique Area Content	A local service for the area
Music to Speech	Minimum 85% music and 10% speech
Hours of Broadcast	24



Smithy Rock

Format	Classic Rock
Licence Description	A service playing classic and some new rock, targeting listeners aged 35 plus.
Fuller Description	A new service reflecting the Midlands rock music scene, and featuring artists who have recorded at the Old Smithy studios. Speech will include music related information relevant to the audience.
Unique Area Content	A service broadening music choice. It is proposed that the service will be broadcast on neighbouring local multiplexes.
Music to Speech	Minimum 90% music and 5% 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.
Fuller Description	Shuffle will reflect the trends of young people. It is a music intensive service, playing chart, dance and rock music alongside programmes and features created by the listeners. Speech will include information of relevance to the target audience.
Unique Area Content	A service broadening music choice. It is proposed that the service will be broadcast on neighbouring local multiplexes.
Music to Speech	Minimum 90% music and 5% speech
Hours of Broadcast	24



Local Live

Format	Full Service
Licence Description	A full service providing mainly current and classic hit music and speech. Speech will include news, traffic & travel, entertainment news, sport and listener interaction.
Fuller Description	This speech rich service will provide a unique service to the area, providing national and local news, information pertinent to everyday lives, including opportunities for local listeners and organisations to air their points of views. Other speech will include content addressing the needs for all communities, travel, weather, sport and general entertainment and what's on. The target audience is aged 30 plus.
Unique Area Content	A service offering a broadening of speech choice. It is proposed that the service will be broadcast on neighbouring local multiplexes.
Music to Speech	Minimum 50% music and 30% speech
Hours of Broadcast	24



Easy Radio

Format	Easy Listening
Licence Description	A broad range of easy listening music with a significant element of tracks with a country crossover influence, including rock, folk and blues.
Fuller Description	Easy Radio is a music based service playing a range of easy listening genres featuring familiar music from 60s to today and drawn from a broad library. Around 25% of the music will be current music. Speech will include news, relevant information for the audience and an element of interactive programme.
Unique Area Content	A network service offering a broadening of local choice.
Music to Speech	Minimum 85% music and 10% 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.
Fuller Description	UCB UK will provide a wide range of information to inspire and transform the listening experience. The station is non-commercial; carrying no advertising other than for in-house services.
Unique Area Content	A network service broadening music and speech choice
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.
Fuller Description	Continuous traffic and travel service provided by the Highways Agency with information collated from a variety of sources including the National Traffic Control Centre and TrafficLink.
Unique Area Content	The service will cover all motorway and key trunk roads and will be localised with live updates on the local road network.
Music to Speech	100% speech
Hours of Broadcast	24



Temporary Services

61. We are keen to maximise the opportunities for the general public to be involved in radio. We support the notion of temporary services being able to access capacity which may be achievable through bit rate trading. Such services could include programming from:

- Sports Clubs
 - Hereford Rugby Club
 - Hereford United Football Club
 - Worcester City Football Club
 - Worcester Warriors

- Local Festivals and Events
 - Flavours of Herefordshire Food Festival
 - Worcester Festival
 - Ledbury Poetry Festival
 - Leominster Festival
 - Three Choirs Festival

- Local Community Radio and other groups
 - Youthcomm Radio
 - University of Worcester

- Other Events
 - Schools and colleges
 - Local football coverage
 - Christmas

- Communities of Interest

Being able to widen events coverage clearly broadens choice, as well as enhancing the attractiveness of digital radio in general. All such proposals are of course subject to obtaining the necessary rights.

In reaching agreement with service providers, we will seek to contract flexible capacity allocations that will reflect the expected listening patterns of their individual audiences. As audiences vary in size and their daily activity changes, we will seek to provide service providers with the opportunity to vary their capacity up and down to meet their particular audiences requirements, by varying bandwidth to suit listening patterns. As the requirements of service providers develop, and enhanced data services are implemented, there may be increasing demand for regular multiplex re-configurations.

- 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?

Wyvern FM	
Characteristics	Wyvern FM appeals to those with an interest in contemporary hit radio (which covers a broad range of popular current music from a wide selection of music genres). As a predominantly local radio station, it provides local news, travel and information.
Target Audience & Demographic Profile	Wyvern FM has a strong female bias (58.2%, against a TSA average of 51.6%). Its principal listening is amongst 25 to 44 years olds. In relation to socio demographics, Wyvern FM has a slight C2DE profile (54.0% against an area average of 55.2%).
Summary	Wyvern FM is a popular service, with a strong market position. As such, it will play a pivotal role in the promotion of digital radio.

Sunshine 954 / 1030	
Characteristics	Sunshine is a full service local AM station. Sunshine's unique mixture of music across at least five decades will have a wide appeal, skewed to the older demographics and sitting comfortably alongside 'Local Live' and other services on the multiplex. Sunshine 954 / 1030 is a local dedicated service during daytime. Outside these hours, it shares programmes with Ludlow based Sunshine 855.
Target Audience & Demographic Profile	Whilst having broad appeal, Sunshine's target audience is aged 35 plus. Our research would indicate Sunshine has a slight male bias.
Summary	Sunshine is a service that currently suffers from the decline in AM listening. However, our research highlights high consumer interest in the genre. Providing the format in digital quality will help promote the uptake of DAB and significantly enhance the viability of the service.

Smithy Rock	
Characteristics	A Midlands focussed classic rock service, playing tracks from the last 4 decades, with a sprinkling of more recent tracks.
Target Audience & Demographic Profile	The format would have broad appeal with both males and females. Its principle audience would be aged 35 to 54, with a significant secondary audience aged 16 to 34. It is likely that the service will achieve a slight C2DE bias. Classic rock is another format that can help stimulate demand for DAB, with 71% of those interested in this format not currently owning a DAB set. There was high interest in this type of format among those people who currently have BBC stations in their listening repertoire (77%) or who only listen to the BBC (35%).
Summary	A popular format with broad audience appeal. It would bring new listeners to DAB digital radio and attract an audience from the BBC.

Shuffle	
Characteristics	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.
Target Audience & Demographic Profile	The format has high appeal with its target 16 to 34 year old audience and equal appeal among the sexes. With two thirds of those interested in this service currently do not own a DAB radio, the format has the potential to stimulate DAB up take, particularly in the important under 25 demographic. There was high interest in the format from those who are heavy BBC listeners - almost three quarters of those who currently listen to the BBC, and more than a third of solus BBC listeners scored this service.
Summary	The station's musical genres (of chart, dance and rock music) are extremely popular with the target audience. In contrast to the broader local services carried broadcasting on analogue radio, this youth format will super-serve its audience with information relevant to the target audience, including music updates and what's on.

Local Live	
Characteristics	The only mixed music and speech service in the H&W area, and the first commercial station with an objective to offer a speech rich commercial service in this area.
Target Audience & Demographic Profile	The target audience for this service is 30 plus, and our research highlights that it would have broad age appeal. Research identifies that around 16% of adults would choose to listen to a mixed music and speech station, with women more interested in this concept than men (56% v 44% respectively), and delivering an ABC1 profile audience (56%). The format should help stimulate DAB take up, with 70% of those interested not currently owning a DAB set. There was high interest in this type of format among those people who currently have BBC stations in their listening repertoire (80%) or who only listen to the BBC (40%).
Summary	A popular format with broad audience appeal. It would bring new listeners to DAB digital radio and attract an audience from the BBC.

Easy Radio	
Characteristics	Easy Radio focuses on a broad range of easy listening music with a significant element of tracks with a country crossover influence, including rock and folk.
Target Audience & Demographic Profile	Our research highlights high interest in the Easy Radio concept, and that the service is likely to appeal to an older, 45 plus audience, with a female bias, delivering a slight ABC1 profile. This format should be a strong motivator to stimulate DAB take up, with 71% of those who would like to listen not owning a DAB set as yet. Almost half of those interested in listening to this format currently only listen to BBC stations (46%)
Summary	A popular format that would appeal to an older audience, bring new listeners to DAB digital radio and attract an audience from the BBC.

UCB UK	
Characteristics	UCB UK is a Christian radio station for the whole family. It will bring a unique service to the area, offering a rich alternative to existing provision.
Target Audience & Demographic Profile	The target audience is all age groups, although research highlights the main interest to be with those aged 55 plus (14%), with high interest also recorded by those aged 35 to 54 (11%). The service is likely to have a female bias (58%) and deliver a strong ABC1 profile. 71% of those wanting to hear this service do not currently own a DAB set, indicating another of our services could help drive DAB take up in this area. Almost 80% of those interested in hearing a Christian service are currently BBC listeners, and almost 40% are solus BBC listeners.
Summary	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.

Traffic Radio	
Characteristics	An innovative service from the Highways Agency providing continuous localised traffic and travel service. At the moment radio traffic bulletins are provided sporadically, at a time when the station wishes to provide them rather than when an issue arises. Their frequency also varies across the week, with significantly lower non-peak and weekend updates. Highways Agency research highlights that drivers would wish to be able to 'dip-in' to such a service prior to their trip or whilst in a vehicle.
Target Audience & Demographic Profile	The target audience for the service will be broad, appealing not just to business commuters, but also housewives and parents with children on the school run.
Summary	By making information on the road network more accessible, the proposed service will help reduce congestion by informing motorists about major congestions, thereby enabling them to divert, delay or cancel their journey. The benefit of the service is not just to individuals, but also to business. Reducing road journey times will help deliver environmental benefits through reduced emissions and improved driver safety. With broad appeal, the service should have a significant benefit on the take up of DAB receivers.

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
Wyvern FM	GCap Media plc	No	Yes
Sunshine 954 / 1030	Classic Hits Radio Ltd	No	No
Smithy Rock	Murfin Media Ltd	Yes	No
Shuffle	MuxCo Hereford & Worcester Ltd	Yes	No
Easy Radio	Easy Radio Ltd	Yes	Yes
Local Live	Town & Country Broadcasting Ltd	Yes	No
UCB UK	United Christian Broadcasters Ltd	Yes	Yes
Traffic Radio	Highways Agency	Yes	Yes

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.

62. MuxCo H&W believes that innovative data services play a key role in providing value-added services to consumers. Their role in both supplementing the audio stream and navigating towards content is hugely important. Additionally on a local multiplex, data services can provide access to valuable local content.

As part of our consumer research, we researched attitudes to ancillary data services, either as visual or as audio download services. In response to the question "Which, if any of the following types of information would you like to receive in visual / audio form?" high interest was shown for the following information types:

Visual	Audio
Weather (51%)	Local news (21%)
Local news (44%)	Weather (21%)
Traffic & travel information (39%)	National news (18%)
National news (36%)	

Consequently, we feel that it is important to create an environment with our service providers that encourages them to create new and innovative content streams. Our chosen multiplex platform will support 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:

- Dynamic Label services
- Electronic Programme Guide

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

Dynamic Label

63. DLS is a very simple technology – but its simplicity gives it enormous strengths. It demonstrates immediately a 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.

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.

Electronic Programme Guide

64. 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. The EPG allows 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. Our research showed a high level of interest (31%) 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.

We have had detailed discussions with All In Media Ltd ('AIM') relating to the launch of an EPG channel on the multiplex. The 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 the EPG channel on this multiplex.

Use of variable-XPAD

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

We will work with the service providers, NGW and colleagues across the industry to assess the opportunities to improve the performance of the audio encoders for stereo at rates under 128 kbits. If satisfactory and following any required approval from Ofcom, we may wish to use some of any additional XPAD capacity that was freed up to allow them to use that capacity for enhanced programme related data services.

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 (The DigiZone) through to the development of standards such as the EPG and the launch of highly dynamic text services.

We also 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:

- For example, when listening to a breakfast show, 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:

- For example, the user is listening to a radio station and hears an advert for a new car which could be audio but also visually demonstrated on their device and using the red button functionality send information via a URL link to the external a car dealer's web site.

Rewards:

- For example, the user could 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.

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.

66. 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.*

67. 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.

68. The Herefordshire & Worcestershire multiplex is overlapped by MXR's West Midlands multiplex by 38% (adult PPA) and by CE Digital's Birmingham multiplex by 23%. These overlaps are concentrated in the North East of the H&W PPA area (in particular, Bromsgrove, Redditch, Kidderminster and Bewdley). In relation to the majority of the H&W multiplex area, and the principal centres of the cities of Hereford and Worcester, the new H&W multiplex is the only true local multiplex in the area. A map of the overlaps is included in Part B.
69. The services currently on the West Midlands multiplex (38% overlap):

West Midlands	
Galaxy 102.2	Urban / Rhythmic Hits - A simulcast of Birmingham's Galaxy 102.2, playing a mix of dance, soul and rhythmic music and targeting young adults aged between 16 and 34. Speech includes news and entertainment features. 85% music and 15% speech.
100.7 Heart FM	Melodic Adult Contemporary – a simulcast of the West Midland regional service. Features melodic adult contemporary hits together with classic tracks from the 80s and 90s. Target audience is females aged 25 to 44. Includes regional news and information. 80% music and 20% speech.
Smooth FM	People aged 50 and over - a simulcast of the West Midland regional service. A station providing melodic music and lifestyle oriented speech designed to cater for the tastes and interests of listeners aged 50 years plus. 70% music and 30% speech.
Capital Disney	Teen and Pre-Teens - A networked digital-only service targeting pre-teens and teenagers aged between 10 and 16. Plays new music and includes relevant local news and information. During peak times includes four hours of locally relevant presenter led programming. 90% music and 10% speech.
The Arrow	Adult rock - A networked digital-only service playing classic rock with some new rock, appealing to 40 to 59 years old. Includes local news and information. During peak times includes four hours of locally relevant presenter led programming. 90% music and 10% speech.
Real Radio	Easy listening - A networked digital-only service providing easy listening music from the preceding 40 years, appealing to listeners aged 45 years plus. Includes local news and information. During peak times includes four hours of locally relevant presenter led programming. 90% music and 10% speech.
LBC	News, views and entertainment - 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.
Kerrang 105.2	Modern & Classic Rock – a simulcast of the West Midland regional service. Kerrang appeals to 15 to 34 year olds, playing a rock music with attitude. Provides news and information relevant to the target audience. 80% music and 20% speech.
Choice	Urban - A networked digital only 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. 95% music and 5% speech.

70. The services currently on the Birmingham multiplex (23% overlap):

Birmingham	
96.4 FM BRMB	Contemporary Hit Radio - A simulcast of Birmingham's BRMB. A modern, mainstream, contemporary hit radio station, broadcasting popular current music from a wide selection of music genres. The majority of its music is from the preceding 2 years. Speech includes news and information relevant to a 15 to 44 target audience. 80% music and 20% speech.
Capital Gold 1152	Gold - A simulcast of Capital Gold. A music-led service playing popular, up-tempo music hits from the previous four decades, featuring news and information relevant to a target 35 to 54 year old audience. 80% music and 20% speech.
Xfm	Modern Rock - A Midlands regional service on XFM London, featuring innovative, modern rock with attitude. News and information will be relevant to a core 15 to 34 audience. Local programming strands required from 1/3 digital penetration. 85% music and 15% speech.
Magic	Soft and Melodic - A music-led service similar to London's Magic 105.4 FM service, playing soft and melodic tracks. Relevant news and information provided for a core 35 to 44 audience. Once digital penetration reaches 33% of households, will include local news and travel at breakfast. 80% music and 20% speech.
Radio XL	Asian - A simulcast of Radio XL, a service aimed at Birmingham's Asians featuring music by artists of Asian origin and/or in an Asian language. News and information reflects the Asian communities in the area. 80% music and 20% speech.
Kiss	Dance - A simulcast of London's Kiss 100 dance music service. News and information will be relevant to the target audience of 15 to 34 year olds. Local news and travel at breakfast is required from 1/3 digital penetration. 85% music and 15% speech.
Sunrise Radio	Asian – A music based service called Sunrise Radio, featuring artists of Asian origin and/or in an Asian language. 80% music and 20% speech.
Chill	Chill-out – A music service playing music in a chill-out format – a relaxing, uplifting and varied mix driven by melody and harmony, chosen for its ability to reflect and create a mood rather than for its chart success. Musical influences will include ambient, acoustic songwriters, trance and smooth jazz. 100% music.

71. Given the significant choice of listening already available on these two existing multiplexes, we believe the H&W multiplex needs to broadcast predominantly local stations alongside carefully selected new digital brands. We have taken into account the services carried on them in our Broadening of Choice review.

Wyvern FM			
Service	<p>A contemporary hit radio service broadcasting popular chart songs from a wide range of genres, as well as high quality and entertaining speech.</p> <p>Wyvern FM broadcasts unique programming on weekdays from 3am to 7pm, Saturdays 7am to 7pm and Sundays 8am to 4pm. At other times, Wyvern FM shares network programming with other GCap services, although with local idents and advertising.</p>		
Comparative Services	West Midlands None	Birmingham BRMB	MuxCo H&W Shuffle
Broadening of Choice characteristics	<p>As a broad appeal service for under 40s, there will undoubtedly be some duplication with the music output on other CHR formatted services. However, Wyvern FM is differentiated by its distinctive and unique editorial focus on Hereford & Worcester.</p>		

Sunshine 954 & 1030			
Service	<p>A classic pop hits music service playing tracks from the last four decades.</p> <p>Sunshine broadcasts dedicated programming on weekdays during daytime. At other times, it shares programmes with Sunshine 855. It is one of two services whose editorial concentrates on the broader Hereford & Worcester area. We will be happy to discuss with Laser the opportunities to carry Sunshine 855 (Ludlow & Shropshire) content in a viable way.</p> <p>The upgrade to digital and stereo output will help improve the sound of the station and its appeal to potential listeners who have yet to enjoy its mix of music, personalities and local information.</p>		
Comparative Services	West Midlands None	Birmingham Capital Gold	MuxCo H&W None
Broadening of Choice characteristics	<p>Whilst there will be some musical overlap with Capital Gold and other broad formatted services, Sunshine is the only service playing this genre with specific local programming and local news and information for Hereford & Worcester, including travel, weather and news.</p>		

Smithy Rock			
Service	A rock service focusing on the Midlands rock scene. Music will mainly comprise classic rock, with some limited newer rock material.		
Comparative Services	West Midlands The Arrow Kerrang	Birmingham None	MuxCo H&W None
Broadening of Choice characteristics	<p>The Arrow is a networked adult rock service, with limited local inserts, whilst Kerrang is a simulcast of the West Midlands FM service, with a greater focus on newer material.</p> <p>Smithy Rock will uniquely focus on the Midlands classic rock scene, and reflect the music heritage created at the Old Smithy studios. Taking into account the MXR and Birmingham multiplex coverage areas, it will be the only local rock service audible across all of the PPA.</p>		

Local Live			
Service	A mixed music and speech service, playing a broad mix of current and classic hits, alongside international and UK news, information relevant to the listener, and interactive programmes.		
Comparative Services	West Midlands LBC Real Radio	Birmingham None	MuxCo H&W None
Broadening of Choice characteristics	<p>The proposed service will be only commercial speech rich service on MuxCo H&W. As such it will cater for the untapped demand for news and information.</p> <p>LBC is a networked speech service with limited regional content, and little focus on the H&W market. Whilst there will be some music cross over with Real Radio, the overall mix and style of music and speech of the new service will provide differentiation.</p> <p>Local Live will provide an alternative source of news and speech content. It will also provide commercial competition for BBC Hereford & Worcester.</p>		

Shuffle			
Service	A youth station, playing chart, dance and rock tracks, and focusing on the tastes and interests of 18 to 34 year olds.		
Comparative Services	West Midlands Kerrang Galaxy	Birmingham Kiss XFM	MuxCo H&W Wyvern FM
Broadening of Choice characteristics	<p>Whilst a number of specialist services playing the music genres that Shuffle will cover exist on the existing local multiplexes, each focuses on specific 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 network services, none provide local content relevant to H&W. In addition, they are only available in the north east of the area.</p> <p>Music overlap with Wyvern FM arises from the latter's broad CHR format. However, its positioning as an older targeted service provides greater differentiation in its style and editorial focus.</p> <p>For younger listeners across the multiplex area, Shuffle will be a welcome addition to the radio landscape and providing local commercial competition for BBC Radio 1.</p>		

Easy Radio			
Service	A music based service playing a range of easy listening genres featuring familiar music from 60s to today and drawn from a broad library.		
Comparative Services	West Midlands Smooth FM Real Radio	Birmingham None	MuxCo H&W None
Broadening of Choice characteristics	<p>The broader music mix of Easy Radio, in particular music from artists with a country crossover influence including rock, folk and blues, provides a differentiator with the above services.</p> <p>Easy's speech, with news and relevant information for the audience and an element of interactive programme, will also act as a point of differentiation. In addition, plurality of ownership provides additional broadening of choice.</p>		

UCB UK			
Service	A unique service targeting the Christian community with contemporary Christian music and classic favourites and news, current affairs, teaching and a positive perspective on today's lifestyle.		
Comparative Services	West Midlands None	Birmingham None	MuxCo H&W None
Broadening of Choice characteristics	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 overlap between the music played by UCB UK and that available on other services carried on the multiplex.		

Traffic Radio			
Service	A unique service providing regular and up to date traffic & travel information.		
Comparative Services	<i>West Midlands</i> None	<i>Birmingham</i> None	<i>MuxCo H&W</i> None
Broadening of Choice characteristics	Traffic Radio is a new and unique service, with no comparable service currently provided in this region (or across the UK). Whilst existing analogue services, BBC and commercial, provide traffic & travel bulletins, these are often limited in scope and only broadcast during peak programming. Traffic Radio provides an opportunity for 24 / 7 reporting of traffic issues.		

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

14. Audience requirements

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

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

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

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

Key Objectives		Specific Questions	How Conducted	Size and Composition	When
Desk Research	To get an up to date picture of the digital landscape.	To track digital penetration. To estimate the impact of the adjacent MXR and CE Digital multiplexes.	Review of DRDB and relevant RAJAR data on digital audiences. Analysis of existing multiplexes.	Not relevant	April / May 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	April / May 2007
Consumer Study	To gauge consumer awareness, understanding and usage of DAB digital radio. To quantify interest in potential formats and data usage applications. To estimate audience levels, individually and collectively, for the proposed complement of services.	To identify the likely audience profiles for each planned service and to see how these services work collectively to enhance the total audience potential for DAB digital radio. To look at the propensity to listen and the impact that the new services collectively would have on the existing market.	Consumer survey conducted by TNS. All interviews conducted in-person using Computer Aided Personal Interviewing equipment.	500 adults 15+ from across the PPA. Sampling PPS Quota controls to known demographic profile.	April / May 2007

72. Through our association with NGW, we have also been able to access the very considerable research dossier undertaken as part of their national commercial multiplex application. In particular, we have reviewed the qualitative research to gauge consumer attitudes towards DAB digital radio. Whilst not strictly pertinent to this multiplex area, we believe that the views found in the research are applicable across the UK as a whole.

A. Desk Research on uptake of DAB

73. A review of DRDB published data was undertaken to ensure our business planning was fully up to date with latest penetration levels and forecasts for digital take-up, with findings summarised in answer to Q.10(d). Our review of the adjacent local multiplexes is detailed in our answer to Q13.

B. RAJAR – Analysis of Market and DAB digital radio

74. The main purpose of our RAJAR analysis was to determine existing radio listening behaviour in order that we could gauge how formats would complement existing services and create the best chance for the multiplex to maximise listeners and listening hours, especially with regard to current BBC radio listening.

We have also reviewed RAJAR data for the UK as a whole in order to better understand the relationship of digital radio within the total radio mix and how this might grow over time.

RAJAR analysis was undertaken within the TSA of BBC Hereford & Worcester, using a rolled 12 months data for the last 3 years.

Current radio listening

75. The BBC has dominated the radio listening landscape across Herefordshire & Worcestershire for several years.

'All BBC' currently accounts for 67.6% of all radio listening, compared to its national average of 54.9%. Both BBC Network services and BBC Local services perform significantly above average in this area. In relation to commercial radio, total performance is just over 12% percentage points lower than the UK average; a result, we believe, of the low level of local commercial choice currently in this market.

The following table summarises RAJAR performance for 2006 (rolled averages) within the Hereford & Worcester TSA and compares this with the UK as a whole.

Market Share	MuxCo H&W	UK
All BBC	67.6%	54.9%
• BBC Network	52.4%	44.3%
• BBC Local	15.2%	10.6%
All Commercial	30.6%	43.0%
• INR	10.7%	8.5%
• ILR	19.9%	34.5%
Other	1.8%	2.1%

Source RAJAR 12 mths ending Q4 2006

The following chart details the relative market shares between the BBC and commercial radio within the Hereford & Worcester TSA for three key age groupings, and compares these with results for the UK as a whole.

Market Share by Age	2004	2005	2006	UK
15 to 34				
All Commercial	45.2%	51.0%	44.1%	56.2%
All BBC	54.6%	46.4%	53.3%	41.3%
35 to 64				
All Commercial	30.2%	30.8%	30.4%	43.5%
All BBC	68.1%	67.9%	67.8%	54.4%
65 pluses				
All Commercial	22.3%	22.6%	19.3%	24.7%
All BBC	77.0%	76.3%	79.9%	73.6%

Source RAJAR 12 mths ending Q4 2006

It highlights that the BBC dominates in all three groups. Compared with the UK, commercial radio within H&W under-delivers in all age groups:

- Whilst commercial radio is strongest with 15 to 34s, its market share amongst this age group is less than 45%, 12 percentage points lower than the UK average. This is particularly disappointing as this is the only age group where nationally commercial radio beats the BBC. We believe that services such as 'Shuffle' will help improve commercial radio's position
- Amongst listeners in the mid age market, commercial radio's performance in H&W is almost 70% below the UK average. We believe that 'Local Live' will find great appeal with this demographic, many of whom will also enjoy 'Easy Radio'.
- Among 65 pluses, compared with the UK as a whole, commercial radio in H&W achieves less than a 20% share, so indexing at 78 with the UK. Urgent action is required to ensure that 65 pluses are not lost by the commercial sector completely. 'Easy Radio', 'UCB UK' and 'Local Live' will offer considerable appeal to this demographic group.

76. The following table summarises the historical performance of ILR over the last three years.

	2004	2005	2006
Wyvern FM			
Weekly Reach %	23.1	22.8	18.5
Total Hours	1140	1063	727
Market Share	10.7	9.9	6.8
Sunshine 954 & 1030**	n/a	n/a	n/a
The Wyre**	n/a	n/a	n/a
Touch FM***	n/a	n/a	n/a

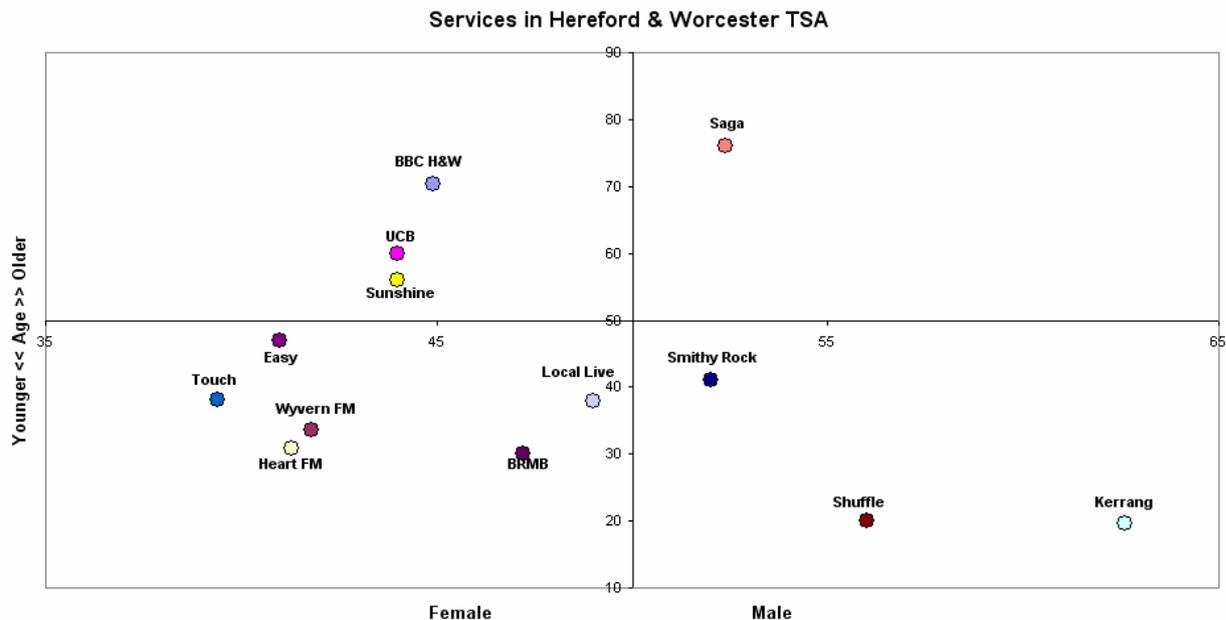
Source RAJAR rolled years

** This service does not participate in RAJAR

*** This service participates in RAJAR as part of a large combined service "Touch South Midlands"

As RAJAR data is not available for the smaller stations, we have referred to our own consumer research to indicate their likely shares. Nationally, 'other' listening represents 1.9% of all listening hours; in H&W it is 10% higher at 2.1%.

77. The following diagram demonstrates the strengths of the existing local commercial services, and the new digital services proposed. Rolled 2006 RAJAR data has been used for Wyvern FM, whilst all other services have been derived from our consumer research.



The take up of digital radio

78. The number of UK adults living in homes with access to DAB digital radio is currently 19.5% (RAJAR Q1 07). This figure is significantly lower than the 29% that our consumer survey highlights as owning or accessing DAB digital radio in H&W. In preparing our forecasts, we have prudently used the national average.

The following table details the profiles of DAB owners. It shows that adults in DAB homes in H&W are more likely to be aged 35 plus, with all age groups performing higher than the UK average.

	Profiles of			H&W Index on UK Population
	UK *Adults in DAB Homes	H&W Adults in DAB Homes	UK Population Profile	
	%	%	%	
Men	52.5	54.7	48.5	113
Women	47.5	44.4	51.5	86
15 to 24	15.8	15.1	15.9	95
25 to 34	14.3	9.5	15.5	61
35 to 44	20.7	19.0	18.7	102
45 to 54	17.8	18.3	15.7	117
55 to 64	16.3	15.1	14.5	104
65 plus	15.2	23.0	19.7	117

Source RAJAR 12 mths ending Q4 2006

RAJAR asks respondents about their awareness of all radio stations that are potentially available to them. MuxCo H&W has had access to analysis undertaken on a national basis, which looked at awareness and reach conversion. This highlighted that reach is not keeping pace with the rise in DAB penetration and underscores our belief that individual programme service providers will need to undertake extensive consumer marketing, over and above the work undertaken

by the DRDB, to ensure that services attract listeners on the H&W multiplex. This will be particularly relevant to the digital only services without access to an analogue service to assist in cross platform promotion.

79. The following tables look at the overall time spent listening to the radio by 'All Adults' and 'All Adults in DAB Homes'. These have been indexed against each other. Across the last 3 years, adults in homes with DAB sets listen to the radio for an average 16% longer across a week. During 2004, that average was 21% higher. As the sales of DAB sets started to take off in 2005, the average has dropped back slightly as more recent DAB purchases appear to be more general set replacements than purchases to gain access to DAB and its unique service offerings.

Average hours per week listening to the radio by all adults

2004				2005				2006			
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
24.7	24.4	24.4	24.0	24.0	23.9	24.1	23.9	23.8	23.5	23.9	23.5

Average hours per week listening to the radio by adults in DAB homes

2004				2005				2006			
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
29.4	29.2	29.7	29.1	28.0	27.2	26.6	27.8	27.6	27.0	27.0	26.5

Index comparing listening by adults in DAB homes v. all adults

2004				2005				2006			
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
119.0	120.7	121.7	121.3	116.7	113.8	110.4	116.3	116.0	114.9	113.0	112.8

These findings are very encouraging since they strongly indicate that access to DAB is having a positive impact on time spent listening to radio in total, and underpins our consumer research findings which has indicated that listeners would increase the amount of time spent listening to radio in total in order to incorporate our new services into their repertoires.

Furthermore, when looking at respondents with access to DAB in home, we found that average time spent listening to digital only services was higher than amongst all adults to these services. Interestingly, when we looked at the simulcast stations, we found that this was not the case. Ease of access, which DAB offers, is encouraging listeners to broaden their consumption away from their traditional analogue stations.

The interesting aspect about this analysis is that listening to other digital services - quasi national, regional and local (many of which are known brands), is demonstrating the preference to listen via DAB when available.

The platform survey data undertaken with respondents with digital access, suggests that all digital listening represents 22.7% of all radio listening, split DAB 12.3%, DTV 6.1% and the Internet at 3.6%. Overall, therefore, analogue remains dominant with a 77.4% share.

The split of digital radio listening between the BBC and commercial radio highlights that the commercial sector commands the majority share at 56% (Q4 2006); in part a result of increased commercial choice. We believe that the development of local digital radio in H&W will help reverse the current BBC dominance in this market.

C. Main consumer survey – Main Findings

80. The following paragraphs summarise the findings of our commissioned consumer research which was undertaken on behalf of MuxCo H&W by Hallett Arendt. Their full report is attached as Part E.

81. DAB access and ownership

29% of adults own or have access to a DAB digital radio in H&W. Ownership levels are found to be higher among men (34%) than women (25%), and with those in the 35 to 54 age group. Ownership was also found to be significantly higher amongst ABC1s at 31%, a full 14% points higher than C2DEs.

Services which attract women and C2DEs should help to stimulate demand for DAB, as should services which have a younger (under 35; provided for by Shuffle) or older (55 plus; Smithy Rock and Easy Radio) appeal.

82. Motivation for buying a DAB digital radio

For those already owning a DAB set, the most important motivation to purchase was the opportunity to receive existing services in improved quality, both FM and AM, recorded by 45%. A high 35% said that the chance to hear a wide range of new stations was also very important, whilst 30% felt that interference free reception was important. On average respondents mentioned 1.7 reasons, suggesting that there are a number of potential marketing approaches.

83. Perceived value of DAB digital radio

Having acquired a DAB set, it is perhaps not surprising that the perceived value of DAB was the improved quality of existing services, since the lack of marketing of digital only services has yet to impact, even at the national level. At 32%, this was the biggest benefit, with only 16% claiming that the introduction of new services was what made them currently value the set.

Respondents were generally less forthcoming about what they currently perceived DAB's assets to be, suggesting that for a number, DAB has been a bit of a disappointment.

84. Catalyst to purchase DAB digital radio

Among current non-owners, a similar pattern of motivational aspects of DAB was found, although it was interesting to note an increased importance of the opportunity to have interference free reception. This finding is consistent with our knowledge that as a result of the general topography of Herefordshire and Worcestershire, FM reception quality is relatively poor, especially in car. In this regard, DAB will benefit existing FM services enormously.

85. Affect of access to DAB on overall radio listening

Those with access to DAB were asked whether or not they listened to the radio more, less or about the same as before DAB. Whilst 5% stated they listened less, 25% listened more - a net overall improvement of 20%. This would imply that among the population as a whole, the positive benefit was an 6% increase in listening.

86. Share of listening by platform – typical day

Listening in home remains the dominant way in which radio is consumed, accounting for a little under half, 45.7% of total hours. In car listening ranks second, with a high 36.7%, whilst in work accounts for 11.4%. Men and those aged under 35 were most likely to be the ones listening at work/college or school, though men are generally much more likely to be in car listeners.

87. Satisfaction with existing services

Respondents were asked to say how satisfied they were with each station that they listen to regularly. Interesting, the stations scoring the highest (at least 4 out of 5) were, with the exception of BBC Cymru (arguably a Welsh national service) and The Wyre, all national services. Three were digital only services - Core, Capital Life and theJazz, indicating that the more focused nature of these service meets with increased listener satisfaction.

These mean scores, however, disguise the fact that it was mainly national services that achieved high dissatisfaction scores (scoring 1 or 2 out of 5). Radio 1, Radio 2, Radio 3 and 5 Live all achieved dissatisfied scores of 10% plus. National commercial services also scored poorly in this regard. We believe this demonstrates a preference for local service, especially ones that satisfy particular needs or interests.

88. Existing services would want to listen to in digital quality

Around 75% said that they would want to hear one or more local services in digital quality; this finding reflects the strong interest expressed in hearing local services in improved quality earlier in the survey.

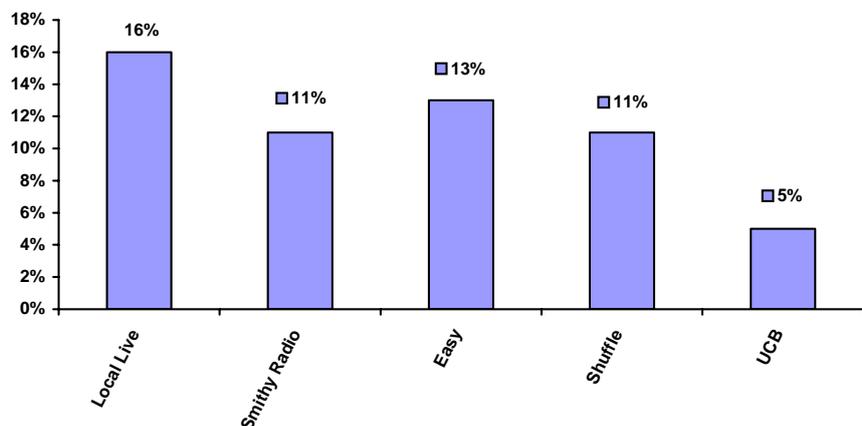
The most wanted existing services were BBC Hereford & Worcester and Wyvern FM (44% and 37% respectively). The scores for AM services were high, especially for the Gloucester overlap Classic Gold service at 16%, with Sunshine 954 / 1530 recording 11%. The lower scores for other local services is a reflection of the size of their analogue footprints within the larger H&W PPA.

89. Choice of new formats

The line up proposed by MuxCo H&W reflects the tastes and interests expressed for both existing and new services. Six of the top ten highest scoring formats are provided by the proposed MuxCo H&W line up.

90. Weekly reach potential

The chart highlights the potential reach opportunity for each new service.



91. Likely audience profiles for the proposed services

The following table summarises the anticipated audience profiles for each proposed commercial service. The numbers in the brackets relate to personal choice.

	Local Live	Smithy Radio	Easy	Shuffle	UCB	Wyvern	Sunshine
	79 (80) %	54 (98) %	66 (93) %	55 (50) %	25 (48) %	150 (185) %	18 (26) %
Male	49 (44)	52 (47)	41 (45)	56 (52)	44 (44)	49 (51)	44 (54)
Female	51 (56)	48 (53)	59 (55)	44 (48)	56 (56)	51 (49)	56 (46)
15-24	15 (13)	15 (17)	11 (7)	41 (58)	16 (6)	21 (19)	- (11)
25-34	23 (14)	13 (14)	21 (9)	22 (14)	8 (-)	23 (19)	27 (11)
35-44	24 (18)	31 (28)	21 (13)	17 (14)	16 (19)	24 (21)	17 (31)
45-54	9 (13)	20 (22)	13 (20)	10 (12)	16 (21)	11 (13)	17 (12)
55-64	19 (21)	19 (16)	18 (23)	6 (1)	20 (27)	12 (15)	28 (23)
65+	10 (22)	2 (2)	16 (27)	4 (1)	24 (29)	11 (13)	11 (12)
ABC1	54 (56)	54 (49)	50 (53)	38 (44)	60 (65)	44 (45)	39 (35)
C2DE	46 (44)	46 (51)	50 (47)	62 (56)	40 (35)	56 (55)	61 (65)

92. Visual & audio data requirements

Weather and local news ranked the highest as information that consumers would like to see on their DAB screens, with scores of 51% and 44% respectively.

Travel and traffic news and national news also rated highly (39% and 36% respectively). Audio information overall scored lower than visual but with the same four features scoring highest.

93. Desire for more functionality

The kind of functionality that respondents would like most from a DAB device was the ability to pause, record and rewind (46%), significantly ahead of the 29% who would like red button functionality that would enable them to receive more detailed information. A similar number, 27%, were interested in the concept of music downloads. 23% were interested in an EPG and/or a large colour screen that showed images of the artist and album cover.

94. Incorporation of station into repertoire

The proposed new services are likely to increase the amount of time spent listening to the radio. This view is supported not just by the number saying this is how they would incorporate new services into their repertoires, but also by what digital radio owners say has already happened to their listening habits since buying a digital set. 9% said they would swap a new station(s) for an existing choice, whilst 20% said that the impact of more choice would drive up the amount of time they spend listening to the radio in total. Thus, for the vast majority, the impact of DAB and more choice would be to stimulate demand for radio and grow the market.

For prudence, our business modelling assumes a marginal decline in both audiences and average hours listened so that the total market reduces. This reflects a view that consumers will be able to access an increasing choice of new media through mobile telephony, as well as having increased TV choice. Whilst research will continue to measure listening to named radio services, regardless of delivery platform, the plethora of services and confusion in the market may also service to depress listening totals.

95. **Affect of new stations on non-radio listeners**
 7% claimed not to have listened to the radio at all in the last 7 days. These respondents were asked whether the increased choice available through digital radio would change their use of radio. 7% stated that it might change their habits, whilst 39% said it would have no impact on them. The balance (54%) was unsure how they would react.
96. **Stations listen to less/stop**
 Among those saying they would listen less to one or more services, 52% claimed that the BBC would be most impacted, with only 17% mentioning ILR services and 30% commercial radio in total. A high 49% of solus BBC listeners said that they would listen less to BBC services and this suggests a chance to convert not just share but reach as well
- Among the very small group who said they would stop listening to one or more stations, we found that the commercial sectors would be marginally more impacted than the BBC. However, further examination suggests that just under a quarter would stop listening to local services, with the remainder national. 29% of those who would stop were solus BBC listeners, who would therefore cease to be solus as new choice would encourage them away. This figure represents 92% of all BBC listeners who said they would stop listening to a service in order to listen to new commercial choice.
97. **Estimated share of listening to DAB**
 If the proposed new services were available today, respondents estimated they would spend around 37% of their listening hours listening to digital radio (39% amongst those who already have access to DAB).
98. **Propensity to buy digital radio**
 11% of non DAB owners said they would definitely or be extremely likely to buy a DAB digital radio, this figure rising to 20% including those who said they would be very likely to buy. These figures suggest that for the total population current DAB ownership would rise from 25% to between 33% and 40%.
99. **Overall conclusion on research undertaken**
 We are satisfied that our programme of research has successfully met our objectives. It has helped with the selection of formats and to underscore our audience projections in our business plan. It has helped us gain a better understanding of consumer awareness of and attitudes toward DAB digital radio. We were able to quantify interest in our proposed formats from the perspective of the consumers' personal tastes, as well as from a wider perspective of what would be in the best interests of the population as a whole. We have been able to assess the impact that these services would have collectively as a multiplex offering on the market as a whole. Overall, we have been able to demonstrate that our services are demanded, increase choice and would stimulate the purchase of digital radios.

15. Local support

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

Advertisements

100. 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. 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, new opportunities will be advertised in the trade press and local newspapers, as well as through the MuxCo website. All local radio services operating within the PPA have been contacted.

Consumer Interaction

101. We believe that interest in the complement of services is best measured by the level of support for the services to be broadcast on the multiplex. The breadth of our research has been detailed in Q.14. Through this research, demand for each format has been evaluated, both individually and collectively on the basis of the chosen complement of services. The research studies have also evaluated interest in digital radio and the key drivers for the new technology, over and above pure choice of formats. The research also evaluated stations and formats which listeners wished to hear on digital radio. A budget has been set for ongoing general research activity to measure interest in existing and new services, and to assist in the promotion of the medium.

Research

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

Marketing

103. 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

104. MuxCo H&W will be served by a multiplex network 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.

In addition, the site will promote DAB Digital Radio, the services offered on each local multiplex, as well as links to other multiplex operators elsewhere in the country. The website will also provide a means of communication between the multiplex and service provider, in particular providing information on transmission issues and fault notices.

Whilst a local multiplex is a virtual company, what is not eliminated is the need to develop a relationship with the listeners about the services it carries. We will want to ensure that we understand the local population, their likes and dislikes, the market gaps and what other services it can provide. Therefore, although there is no wish to have a dialogue with the audience, there is a need to provide a means of access and communication.

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

16. Measures taken to ensure fair and effective competition

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

105. Following the advertisement of the licence opportunity, we contacted the identified analogue licensees (who would qualify for an analogue licence renewal in return for providing a digital programme service on the multiplex) to discuss their digital aspirations and invite expressions of interest in providing programme services. We also contacted companies and organisations who have known digital aspirations or operate digital service elsewhere.

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.

Headline terms including approximate carriage costs have been supplied to the proposed service providers.

During the licence period a similar process will be adopted, with a standard questionnaire being used to assess applicants

Fair and Effective Competition during the Licence Period

106. Each service provider will enter a Service Provider Agreement; the key terms of which will be identical for all service providers. All fees charged will be based solely on a 'cost plus' basis, pro-rata to capacity contracted by each service provider. No fees will be related to revenue fees.

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.

107. 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.

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

Technical quality

19. Division of multiplex capacity

Show, by means of a pair of clearly-labelled tables, the proposed division of the available multiplex capacity into digital sound programme services and other services during all time periods. The tables should depict the proportion of the total available capacity (in kbits/sec) which it is proposed to allocate individually to each of the digital sound programme services listed in response to Q.11, plus any capacity reserved for expansion, inclusive of any which it is proposed to allocate to digital additional services and television licensable content services.

Please also indicate what proportion of these services will be programme-related (see paragraph 4.35). One of the tables should refer to the capacity units taken by each service (i.e. inclusive of capacity used for error protection), and the other table should refer to the bitrate net of error protection capacity, together with the associated protection level (1 to 5) which it is proposed to use, in accordance with ETS 300 401.

109. The following table details the division of multiplex capacity by kbits between the proposed audio channels, data capacity and EPG, during 3 time periods. For prudent business planning, we have reserved 96 kbits for Sunshine 954 / 1030 but confirm that we would be happy to contract 128 kbits for stereo provision if required.

Kbits Allocation	Service Type	UEP	6am to 7pm	7pm to 12pm	12pm to 6am
Wyvern FM	MPEG1L2	UEP3	128	128	128
Sunshine 954 / 1530	MPEG1L2	UEP3	128	128	128
BBC H&W	MPEG1L2	UEP3	128	128	128
Smithy Rock	MPEG1L2	UEP3	96	96	96
Shuffle	MPEG1L2	UEP3	128	128	128
Local Live	MPEG1L2	UEP3	96	96	96
Easy Radio	MPEG1L2	UEP3	96	96	96
UCB UK	MPEG1L2	UEP3	64	64	64
Traffic Radio	MPEG1L2	UEP3	48	48	48
Folder Data	DATA	EEP3A	72	72	72
EPG	EPG	EEP3A	8	8	8
Total			992	992	992
<i>Allocated as % Total</i>			<i>86%</i>	<i>86%</i>	<i>86%</i>
<i>Data as % Total</i>			<i>7%</i>	<i>7%</i>	<i>7%</i>

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

CUs Allocation	Service Type	UEP	6am to 7pm	7pm to 12pm	12pm to 6am
Wyvern FM	MPEG1L2	UEP3	96	96	96
Sunshine 954 / 1530	MPEG1L2	UEP3	96	96	96
BBC H&W	MPEG1L2	UEP3	96	96	96
Smithy Rock	MPEG1L2	UEP3	70	70	70
Shuffle	MPEG1L2	UEP3	96	96	96
Local Live	MPEG1L2	UEP3	70	70	70
Easy Radio	MPEG1L2	UEP3	70	70	70
UCB UK	MPEG1L2	UEP3	48	48	48
Traffic Radio	MPEG1L2	UEP3	35	35	35
Folder Data	DATA	EEP3A	54	54	54
EPG	EPG	EEP3A	6	6	6
Total			737	737	737

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?

111. 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

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.

Over the course of the licence period, we will work with Ofcom and the service providers in evaluating opportunities for services to broadcast in stereo using lower bit rates.

NGW have evaluated two different audio codecs at various different bitrates. They have found subjective differences that may lead to preferences for use of one codec over another, but dependent on the content and bitrate chosen. MuxCo H&W 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.

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.

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 H&W multiplex.

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
Wyvern FM	MPEG1L2	Stereo	Full Rate	UEP3	48kHz UEP3 Stereo
Sunshine 954 / 1530	MPEG1L2	Stereo	Full Rate	UEP3	48kHz UEP3 Stereo
BBC H&W	MPEG1L2	Stereo	Full Rate	UEP3	48kHz UEP3 Stereo
Smithy Rock	MPEG1L2	Mono	Full Rate	UEP3	48kHz UEP3 Mono
Shuffle	MPEG1L2	Stereo	Full Rate	UEP3	48kHz UEP3 Stereo
Local Live	MPEG1L2	Mono	Full Rate	UEP3	48kHz UEP3 Mono
Easy Radio	MPEG1L2	Mono	Full Rate	UEP3	48kHz UEP3 Mono
UCB UK	MPEG1L2	Mono	Full Rate	UEP3	48kHz UEP3 Mono
Traffic Radio	MPEG1L2	Mono	Half Rate	UEP3	48kHz UEP3 Mono

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.

112. MuxCo Hereford & Worcester Ltd is not aware of any issues which would prevent the award of a licence to the company.