



Response to Ofcom Consultation: Radio Restricted Services and 55 to 68 MHz

Background

JFMG Ltd manages the spectrum allocated for use in programme making, entertainment, special events and related activities. JFMG coordinates the use of spectrum, issues licences and collects licence fees on behalf of Ofcom. JFMG has successfully managed spectrum for Ofcom (previously Radiocommunications Agency) since 1997.

In the UK, the professional use of radio for programme making and entertainment purposes is referred to as Programme Making and Special Events (PMSE). PMSE applications include:-

- Broadcast television studio production
- Broadcast television and radio coverage of news, sport or other public events including state occasions
- Theatre and touring shows
- Music and other entertainment productions
- Conferences, and corporate presentations and events
- Movie film productions

Additionally, since June 2004, JFMG has coordinated and licensed the experimental use of Audio Distribution Systems in the band 60.75 – 62.75 MHz on behalf of Ofcom.

Consultation Questions

JFMG has responded only to those questions relevant to the provision of a spectrum management and licensing service for operators of Audio Distribution Systems:

Q7: Do you agree that we should license 'ADS-RSLs' once the ADS trial ends on 31 August 2006?

There has been a demonstrable demand for Audio Distribution Systems during the trial period. Demand for ADS licences has increased by 50% during the second 12 months.

As expected, this demand has mainly been driven by commercial operators providing services that aim to enhance the experience of spectators at sporting events. But during the trial period, another key application has emerged. This is the provision of descriptive services to enhance the experience of visually or hearing-impaired visitors at sporting and other events. The use of radio enables the venue to meet their statutory obligation not to discriminate against disabled visitors by, for example, restricting access to a particular zone.

Ofcom's proposals appear to provide commercial operators with additional opportunities to develop the scope of their services. Clearly, sponsorship and advertising provides the possibility of an alternative business model which is less (or not at all) dependent on the sales or hire of receivers at turnstiles. Also, the



proposed ADS-RSL which would allow the transmission of original content seems to address the emerging requirement to provide descriptive services.

However, the case for all ADS type services to be subsumed into the proposed new ADS-RSL does not seem to be so clear. Arguably, there may be merit in having both ADS and ADS-RSL options available such that the applicant can choose the appropriate product to suit their requirements. Where there is no requirement to carry original content or commercial messages then a plain ADS licence (WT Act only) could be purchased without the additional burden of both cost and obligations of a Broadcasting Act licence. The extent to which this choice is worthwhile would ultimately depend on the relative cost of plain ADS compared to ADS-RSL licences.

JFMG believes that ADS should continue and that the proposed new ADS-RSL will further enhance opportunities. Consideration should be given to the benefits of a flexible structure where both ADS and ADS-RSL are available as appropriate.

Q8: Do you agree with the technical characteristics of the licence? If not, what alternative proposals do you have in mind?

The limited radiated power for ADS has proven to be a success in avoiding radio compatibility issues with other users sharing the same frequency band. This is an issue because, for practical reasons of access to power and communications, both the ADS transmitter and PMSE programme-quality receiver(s) are likely to be deployed close to each other within the same part of a stadium or other venue. A compatibility test at Twickenham showed that a professional quality PMSE receiver was able to operate without significant degradation at only a few metres spacing from a low power ADS transmitter.

There has been interest from operators in increasing the permitted power of ADS. At a sports stadium, it is understood that this to extend coverage to points-of-sale outside the venue. At other types of venue, the spectator area may be more widely distributed demanding a larger target coverage area.

An increase in the permitted power of ADS may well require closer coordination of the physical deployment of ADS and PMSE and is likely to need an increased frequency gap to co-sited PMSE users.

JFMG supports the proposed technical characteristics of the licence but does not wish to inhibit the development of higher-power ADS or ADS-RSL services.

Q9: Do you agree with our conclusions on the potential interference issues concerning shared programme-making use of the spectrum? If you disagree, please give reasons.

The main interference issue is due to the vulnerability of extreme low-cost ADS receivers. Their rejection of unwanted signals is poor such that reception is severely impaired by any signal in the 60.75 – 62.75 MHz band that is significantly (>30dB approx) stronger. The situation is only marginally better (by about an additional



10dB) for rejection of signals in the 53.75 – 55.75 MHz band which is used for similar PMSE applications.

Since the PMSE use is for roving wireless microphones this puts the ‘unwanted’ transmitter typically closer to the public than the fixed ADS transmitter. As demonstrated in the Twickenham site-tests, a 30dB ratio between unwanted and wanted signal can easily be exceeded at all nearby ADS receivers. The PMSE user is concerned that they will be seen as responsible for causing the disruption and so attract unwanted public attention.

During the trial, there were very few events where both ADS and high-power wireless microphones were deployed. But it is anticipated that ADS or ADS-RSL will expand to a greater range of sports and events and so it is expected that incidents will increase.

JFMG believes that this compatibility problem should not be discounted nor left to be resolved purely by commercial interests. The usual countermeasure for this type of situation is to ensure an adequate frequency gap between the PMSE and ADS transmissions. For example, at many events, PMSE requirements are modest and could be accommodated within the 53.75 – 55.75 MHz band with ADS occupying the upper part of 60.75 – 62.75 MHz band giving a frequency gap of about 7 MHz. This gap is sufficient to provide an excellent opportunity for ADS receivers to be made acceptably immune to local PMSE signals without significant increase in unit cost.

JFMG urges Ofcom to consider what, if any, regulatory options or financial incentives might be applied to achieve a receiver performance that is fit for purpose and yet still commercially viable for operators.

Q10: Do the current arrangements ensure that programme-making use of the 60.75 to 62.75 MHz band at “known” events is adequately safeguarded?

The current arrangements have enabled programme making to take priority at events where demand is expected to be heavy but there has been strong interest from ADS operators to break-in to these events too. Inevitably the lack of access for ADS at some events will continue to be challenged.

Since these events are relatively few, JFMG suggests that temporary use of frequencies at around 66 MHz might give a workable solution. Again, ADS receiver performance would be the limiting factor but a frequency gap of 4 MHz to PMSE use still provides an excellent opportunity for ADS receivers to be made acceptably immune to local PMSE signals without significant increase in unit cost.

JFMG supports the current arrangements that ensure priority for programme making in 60.75 – 62.75 MHz band but would like to explore with Ofcom and ADS operators how ADS could be facilitated too.

Q11: If circumstances permit, should 'ADS-RSLs' be available for longer than five days, and if so what is/are the appropriate licence duration(s)?

Q12: If circumstances permit, should the link between an "event" and an 'ADS-RSL' be removed to permit general "site" based licences?

JFMG believes that the current restriction where licences are issued for each event are necessary to ensure that programme making is not crowded out of the 60.75 – 62.75 MHz band. Particularly since the interaction between PMSE and ADS equipment is a barrier to shared use.

If ADS or ADS-RSL are extended to other frequency bands such as 470 – 854 MHz or 66 MHz then longer-term licences issued to the owner-occupier to suit permanent installations would be appropriate.

JFMG believes that "site" licences are not appropriate in the 60.75 – 62.75 MHz band but could be considered in other bands.

Q13: Do you agree that the availability of 'ADS-RSL' licences should be extended to 'non broadcast' frequency bands other than 60.75 to 62.75 MHz?

The availability of non-broadcast spectrum enables a business model driven by sales of either disposable receivers for single events or re-usable 'smart' receivers for a series of events. The 60.75 to 62.75 MHz band seems to be a good fit for these applications.

For the emerging requirement to support the provision of facilities for hearing-impaired and visually-impaired visitors, shared use of the UHF band from 470 – 854 MHz appears to an excellent choice. There is a wide-range of rugged professional quality equipment available developed for personal monitoring by performers in live music and for presenters in broadcasting.

The main use of the band is currently for TV broadcasting but includes radar and radio astronomy. PMSE requirements are accommodated on a geographical sharing basis i.e. using the gaps between broadcast coverage and avoiding radar and radio astronomy locations.

JFMG is long-established in managing interleaved use of the UHF band, 470 – 854 MHz for these types of use. Also, JFMG is ideally placed to carefully coordinate ADS with PMSE to ensure that all requirements at a venue or event are able to coexist.

JFMG supports the proposed roll-out of ADS-RSL (and ADS) to the UHF frequency band 470 – 854 MHz.

Q14: Do you have any comments regarding the costs and administration of 'ADS-RSLs'?

JFMG has a proven track record in coordinating spectrum use and issuing licences on behalf of Ofcom. JFMG and would be interested in continuing to support ADS or the proposed new ADS-RSL licence regime.

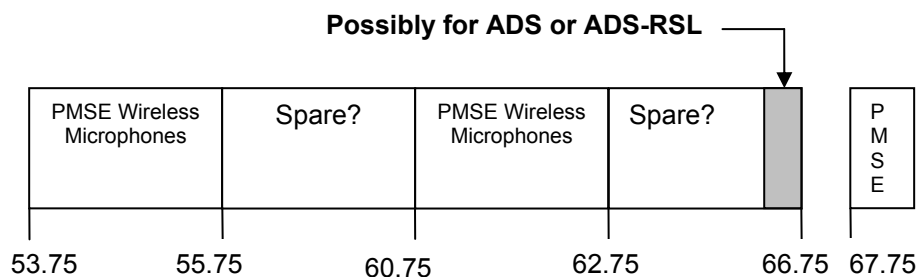
Also, JFMG is experienced in the management of interleaved spectrum and so is ideally placed to support the proposed roll-out of ADS to other frequency bands including 470 – 854 MHz.

Q15: Do you foresee interest in accessing up to 8MHz of frequencies in the 55 to 68 MHz band that are presently almost unused, and if so for what types of service and/or technology? Do you have any views on how Ofcom might release this spectrum to the market for use?

There is perhaps an opportunity to provide a dedicated allocation for ADS-RSL applications in this unused spectrum. The 55.75 – 60.75 MHz band is not ideal as it is sandwiched between the existing PMSE bands and ADS-RSL would interact with PMSE use in either band.

The 62.75 – 66.75 MHz band provides a better opportunity; especially if ADS-RSL operations were allocated at the upper part around 66 MHz. This would give a gap of 3 to 4 MHz to wireless microphones which provides an excellent opportunity for ADS-RSL receivers to be made acceptably immune to local PMSE signals without significant increase in unit cost.

There is some PMSE use in the 67 MHz band but this is for 'base transmit' from temporary base stations within parked-up production vehicles. This is less likely to impact ADS receivers than the roving wireless microphones.



JFMG believes that there is scope for ADS type services at around 66 MHz and the possibility for longer-term licences too.