



Response to Ofcom Consultation: Programme-making and special events: future spectrum access

1. Background

JFMG Ltd is the dedicated band manager for programme-making, entertainment, special events and related activities. It is a privately owned company created specifically to ensure continued and equitable spectrum access to all areas of the programme-making industry.

JFMG successfully coordinates the use of spectrum, issues licences and collects licence fees on behalf of Ofcom, and have done so since 1997. The spectrum we manage ranges from 47MHz to 48GHz and requires expert knowledge of the bands, their uses and restrictions. This includes the spectrum included within Ofcom's Digital Dividend Review, and most importantly for this consultation the interleaved spectrum. JFMG own bespoke tools that uniquely enable us to coordinate interleaved spectrum, ensuring both protection for broadcasting and effective access for programme makers.

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

As the dedicated band manager JFMG Ltd facilitates the successful running of these events. JFMG also provide on-site consultancy services and are dedicated to leading the industry through the transitional period ahead.

JFMG contract ends September 2008

The contract which currently allows JFMG to manage the entire PMSE spectrum (including the digital interleaved) comes to an end on 30 September 2008. The proposals put forward in Ofcom's "Programme-making and special events..." consultation focus on how PMSE could access digital interleaved spectrum in the future. However Question 4 of the consultation clearly indicates that there is an intention to extend, if at all possible the preferred option to the remaining PMSE spectrum as a whole. Ofcom would therefore install these new arrangements at contract end in 2008 or thereabouts. This consultation and its outcome is therefore vitally important to JFMG as it marks a potential change in direction, not only for the PMSE sector, but also for us as a band manager.

As detailed above JFMG have been managing PMSE spectrum for 10 years and also have experience of the mechanisms adopted prior to the current regime. We are therefore uniquely placed to analyse the options put forward by Ofcom, with reference to not only the digital interleaved, but also the PMSE spectrum as a whole. Our experience also allows us to look at the options from both a PMSE and business point of view. It is important to note that to successfully provide PMSE with the security they need, the option adopted by Ofcom will need to facilitate a viable business for the band manager.

2. Summary

JFMG is happy to see that Ofcom have recognised the pressing issue of how digital interleaved spectrum could be accessed after September 2008, and welcomes the inclusion of a question relating to the management of the other PMSE spectrum bands.

We are also pleased to see that the concerns regarding the original DDR proposals have been taken into account, with Ofcom seeking to provide the PMSE sector with greater certainty regarding future access to the digital interleaved spectrum. JFMG recognises that for much of the industry, the PMSE consultation does not go far enough. In so much that it does not provide any further clarity regarding the amount of digital interleaved spectrum to be made available to a PMSE Band Manager. Whilst ideally this question would be answered within the PMSE consultation, JFMG understand that Ofcom may not yet be in a position to do this. Therefore we welcome Ofcom's willingness to try to address one of the important issues now, rather than waiting until they have the answers regarding spectrum quantity.

Please find below a brief summary of our thoughts on the 4 questions posed in the PMSE consultation document.

Question 1

JFMG agrees with Ofcom's identification and much of the analysis of the options for how the PMSE sector could make use of the digital interleaved spectrum. However we feel that some options may be unworkable as they currently stand from a PMSE sector and/or business perspective. We have undertaken a considerable amount of work to determine the benefits of each of the proposals as well as areas of concern that we consider to be barriers to their success. In doing so, we have identified and suggested ways that some of these obstacles may be overcome. We do not therefore indicate any particular preference within our response, instead we provide our thoughts on the pro's and cons of the options and include a discussion of how issues could be addressed to make them workable.

Whilst Options 1 and 2 may appear to be the easiest and safest for the industry in the short-term, JFMG does not believe that these models can be sustained in the long term as it is unlikely that Ofcom could justify funding this spectrum management function indefinitely. However, these systems could be used to ensure a smooth DSO transition for PMSE. It would therefore follow that any contractual arrangements would need to be in place until at least 2012. Whilst JFMG have some anxieties about the feasibility of Option 2 we believe that the status quo with AIP (if reasonable and phased) could be the first step in the journey towards full market participation. JFMG believe a move to market mechanisms is unavoidable in the long term.

Whilst Option 3 appears to reach a perfect compromise between the needs of the industry and Ofcom's objectives, a considerable amount of work will need to be undertaken to bottom out unresolved issues. However, JFMG still believe that with some work a viable business model that benefits the industry, Ofcom and the Band Manager could be achieved. As the option currently stands this would not be possible.

We believe that Option 4 could work as long as the appropriate safeguards are put in place to protect the PMSE industry. This option provides the PMSE sector with the longest security of tenure, however JFMG believe that this may be a step too far for the industry at present.

We also agree with Ofcom's decision to discount Options 5 and 6 from consideration.

We believe that JFMG will be an active and integral participant in whichever management option is finally adopted by Ofcom and will work with them and the sector to ensure continuity during this period of transition.

Question 2

We agree with Ofcom's proposal to offer one package of digital interleaved spectrum for PMSE use. However the amount and configuration of the spectrum included within the package will need to be carefully considered to ensure UK wide access for PMSE users.

Question 3

We do not believe that greater licence exempt use could be made of Channel 70 by PMSE. We believe that there are interference issues that would hinder professional use, with little scope to support more than only a few wireless microphones.

Question 4

We believe that there is scope for applying the options discussed for the digital interleaved spectrum to the other PMSE bands. However we believe that no one option would be suitable for PMSE spectrum in its entirety. The PMSE spectrum needs to be dealt with on a band by band basis because of its diverse nature. We believe that some PMSE bands could be dealt with by introducing market mechanisms, although many will need considerable work to do so. JFMG also believes that there is some PMSE spectrum where market mechanisms could never be employed. It is therefore vital that Ofcom publish their plans to provide continuity between the end of the current JFMG contract and the new arrangements for all PMSE spectrum by the end of 2007.

The response that follows provides in more detail the reasoning behind the statements made in this summary.

3. Consultation Questions

Question 1): *Do you agree with our identification and analysis of the options for how the PMSE sector could make use of the digital interleaved spectrum? Which options, if any do you favour?*

Identification & analysis

JFMG agrees with Ofcom's identification and much of the analysis of the options for how the PMSE sector could make use of the digital interleaved spectrum. But we feel that some options may be unworkable as they currently stand from a PMSE sector and/or business perspective. Therefore the remainder of this question will be answered in the form of an analysis of the options. The analysis will include both the benefits of the option and the barriers to its success. We then look at determining whether there are any mitigation techniques that can be employed to remove these stumbling blocks.

JFMG believe that we will be an active and integral participant in whichever option is finally adopted by Ofcom and will work with them and the sector to ensure continuity during this period.

Options

The analysis of the benefits and barriers to success contained below focus on what we believe to be the most salient points to consider.

Option 1: Status quo

An assumption could be made that a continuation of the current system would be entirely to JFMG's benefit and that we would therefore fully support the status quo option. Whilst JFMG would likely seek to participate in any tender process entailed in securing a further contract, it does not automatically follow that this would be our preferred option.

JFMG are uniquely placed, having worked under the current regime for more than 10 years to know both the advantages and disadvantages that come with such an arrangement. Whilst the current system has worked extremely well until now, it is becoming increasingly clear that it is unlikely to be sustainable in the long-term.

Benefits of status quo

If the current system were to continue it would provide significant comfort to the industry. The system is tried and tested and has been successful for many years. Whilst there would still be a competition to determine who would take on the mantle after September 2008, there would be a guarantee of continued access to high quality spectrum for all PMSE users (in the short-term). The current system fosters a relationship of trust between the band manager and the customer because the band manager's revenue is not tied directly to licence sales. Whilst it is still likely that fees will increase

they would continue to be based on recovering the administrative costs and would therefore remain significantly lower than many other sectors.

In our day to day interaction with customers it appears that the majority would like to see the status quo continue.

Barriers to success

Whilst the current system works well, we believe that there a number of features that make it less attractive than some of the other options. The points in this section are not so much barriers to success, rather reasons why it may not in the long-term be the right option for all concerned.

The main problem with continuing with the status quo is that by doing so, Ofcom, the contractor and the PMSE sector would be perpetuating the current situation whereby long-term access to spectrum is uncertain.

Ofcom state clearly in the consultation that under status quo arrangements licensees of digital interleaved spectrum could not expect to have access to a particular frequency year on year. This means that users could lose access to the new interleaved spectrum with only one year's notice, should Ofcom decide to release it for other uses after all. Given the level of uncertainty and concern the DDR proposals have already caused it would seem prudent to avoid the perpetuation of this situation if at all possible.

In addition to anxiety regarding access to spectrum, the status quo also creates uncertainty of spectrum management, usually on a 3 year cycle. All previous contracts have been for an initial 3 year period with an option for a further 2 year extension should both parties agree. This means that the sector could potentially face changes in spectrum management every three years, a situation that has concerned the industry in recent times. In addition, short-term contracts of this nature are difficult for the contractor to deal with.

JFMG recognise that Ofcom are under increasing pressure to minimise their financial burden. It is therefore understandable that an option that relies on Ofcom paying an organisation for services is not popular. JFMG admit that whilst Ofcom paying an agreed contract price is positive for the contractor's relationship with its customers, it does not provide an incentive to manage spectrum efficiently. The status quo can also cause obstacles for the contractor. All access rights, fees and policy decisions are taken by Ofcom and this can sometimes make it difficult to react quickly to changing circumstances.

The continuation of pricing based on a purely cost recovery basis also exacerbates the problem of security of access, and runs counter to almost every sector that uses spectrum. If PMSE users do not pay the market rate (or similar) for their spectrum, it is difficult to argue for security of access over and above a use that would be willing to pay the market rate. Further still, the gap between current PMSE fees and the market prices for spectrum is considerable. If some parity is not attempted it may mean the PMSE sector will never be able to participate in the market.

Finally all other sectors are having to adopt market methods, including the emergency services and the MoD. The PMSE sector risks losing more spectrum by holding onto the status quo.

Mitigation options

Whilst the current system could continue to work in the short-term, there are a number of adjustments that could be made to mitigate the uncertainty of spectrum access in the mid-term.

Security of tenure for licensees appears to be related to the longest duration licence available for interleaved spectrum (1 year). However, the decision to have an annual licence was a purely arbitrary one made at the beginning of the contract. Those who set up the terms could have easily decided upon 2/5 years for instance. It would seem unfair to base security of tenure for a whole set of licensees based on this 10 year old decision. JFMG suggest that one way of easing the uncertainty of access for spectrum would be to apply the same rights as other licence classes such as Business Radio. This would confer a 5 year notice period on the licensee, providing them with a longer

transition period with which to vacate spectrum. This could also be aligned with a 5 year minimum contract period for the Band Manager.

The only way to ensure that the PMSE sector are in a position to participate in the market, use spectrum efficiently and have some rights to spectrum appears to be an increase in fees. JFMG understand that such a suggestion may not be popular, but putting a greater value on the spectrum the industry uses will lead to longer term security and the possibility of accessing additional spectrum via the market in the future. This could imply a gradual increase similar to those over the last couple of years. Alternatively it could be designed to reach AIP type levels in the future. Applying this mitigation would result in Option 1 turning into Option 2: status quo with AIP.

Conclusion

Whilst Option 1 may appear to be both the easiest and safest for the industry in the short-term, JFMG do not believe that this model can be sustained indefinitely. However, if this is still the industry's preference and becomes Ofcom's chosen option, JFMG has the knowledge and experience to successfully fulfil the role of contractor.

The current system could be used to ensure a smooth DSO transition for PMSE. It would therefore follow that any contractual arrangements would need to be in place until at least 2012. Thereafter, JFMG believe a move to market mechanisms is unavoidable. JFMG will endeavour to play a key part in the smooth transition for the PMSE sector.

Option 2: Status quo with AIP

JFMG believe that Option 2 is preferable to Option 1. In fact the mitigation techniques we tabled for resolving some of the issues surrounding Option 1 result in the creation of Option 2 anyway.

Ofcom claims that it would still fail to prepare PMSE users for participation in the market and that better use of the spectrum would continue to be constrained to some extent. However, we believe that the introduction of AIP would go some way to bringing both of these factors closer to reality. Whilst JFMG prefers this option to Option 1 we also have some anxieties regarding its sustainability in the long-term.

Benefits of status quo with AIP

Whilst the benefits listed for Option 1 also apply to Option 2 there are additional benefits that should be noted.

The phased introduction of AIP would mark the gradual introduction of market methods to the PMSE sector whilst providing the same short-term stability as the current system. Ofcom claim that this is not the case as the method of access to spectrum would continue to be via Ofcom and its contractor. However, many licenses issued by Ofcom are becoming liberalised and tradable to facilitate a move to the market. Business Radio licensees pay AIP for access to their spectrum which is provided by Ofcom. Liberalisation and trading is being introduced to this sector and there has been no debate regarding whether this addresses their ability to participate in auctions down the line. If PMSE annual licences were also liberalised and tradable surely this would introduce the market to the sector and facilitate new ways off accessing spectrum from each other.

JFMG believe that if PMSE users are paying closer to the market rate for spectrum then they should have more of a claim for continued access to it. This is because they would not be denying access to those who put a higher value on the spectrum. We also believe an increase in fees resulting in parity between PMSE and other users would encourage participation in the market. There may be further financial incentives to aggregate and participate in auctions to avoid annual AIP payments.

Finally we believe that the introduction of AIP would encourage the sector to use digital interleaved spectrum more efficiently and that this in turn would drive innovation. Licenses will cost significantly more and users could be forced to pass these costs on. With competition in the industry being so fierce it is likely that users will look at ways of reducing their requirements (relinquishing their spares for instance) and innovating, rather than increase their fees and potentially lose work.

Barriers to success

Many of the barriers to success listed in Option 1 also apply to Option 2; however there may be more things that can be done to remove these barriers. Where the same barriers exist please refer to Option 1 for full details.

As in Option 1, under the status quo with AIP arrangements, licensees of digital interleaved spectrum would still have no long-term security of access past their annual licence. They would also run the risk of losing the spectrum somewhere down the line if Ofcom made a policy change. The anxiety over the contractual arrangements would also remain, along with the lack of incentives for the band manager to manage the spectrum efficiently.

In addition to those listed above, the introduction of AIP produces a number of barriers in itself. AIP for the digital interleaved spectrum will need to be calculated and it could be assumed that it would be based on AIP for broadcast spectrum. However, this figure has not yet been calculated by Ofcom making it more difficult to estimate what AIP for digital interleaved spectrum may look like (although we understand that this work will be addressed shortly). However, if we were to estimate fees based on the existing AIP figures for mobile or fixed uses, it is clear that PMSE fees would increase considerably. Whilst phasing may help users adjust, this could lead to an increase in illegal use and therefore result in reduced fees collection. If large enough numbers of users reneged on their obligation to purchase a licence from the contractor, there could be a return to the situation whereby the licence fees would not cover the cost of the contract.

Mitigation Options

We believe that the same mitigation techniques can be used as for Option 1 to resolve the issues of uncertainty of spectrum access in the mid-term. This would involve introducing a 5 year notice period for PMSE licences along with a 5 year minimum contract period for the Band Manager.

In addition, we believe bringing PMSE in line with other Ofcom licences and enabling them to be traded and liberalised, along with the phased implementation of AIP, will encourage efficient use and a move towards the market. It should also provide licensees with greater security of access as they would no longer be preventing a use that values the spectrum more highly. AIP will need to be determined quickly in order for the industry to prepare for the transition and phasing will hopefully keep illegal use to a minimum in the short term. It is clear however, that AIP may drive users underground in the long-term so an effective programme of monitoring and enforcement, publicity and self-policing will have to be adopted. However, it is unclear how successful any such programme can be without the full support of the industry.

Conclusion

Whilst this would appear to be one of the safest options in the short-term, JFMG believe that it would not provide any long-term security of access for PMSE users. It is also unlikely that Ofcom could justify funding this spectrum management function indefinitely.

Whilst we have some anxieties about the feasibility of Option 2 we believe that the status quo with AIP (if reasonable and phased) could be the first step in the journey towards full market participation. Fees would be more competitive and would encourage the industry to be more spectrally efficient and innovative. It could also provide stability throughout the switchover period. Thereafter it would seem the perfect time to re-evaluate the situation and look at moving the PMSE sector still closer towards the market. As stated previously, if this is the industry's preference and becomes Ofcom's chosen option, JFMG has the knowledge and experience to successfully fulfil the role of contractor.

Option 3: Beauty contest with AIP

Option 3 and to some extent Option 2 are closely aligned with the ideas we introduced in our response to the Digital Dividend Review consultation. Whilst our initial reaction to the Beauty contest with AIP was favourable, on careful reading and consideration of the consultation text, tables and Regulatory Impact Assessment we realised that it was not as straightforward as it seemed. We believe a considerable amount of additional thinking will need to be undertaken to make this option viable from both a PMSE and business perspective. As the option currently stands it would not easily facilitate the success of either.

Benefits of beauty contest with AIP

One of the most attractive aspects of the Beauty Contest with AIP is that the successful Band Manager would own the spectrum rights. This would mean that the organisation managing PMSE spectrum would have tangible assets. These assets would motivate the Band Manager to make the best use of them. Whilst, if put into the wrong hands this could have a negative impact on the PMSE industry, if a Band Manager was selected based, amongst other things on their alignment to PMSE interests, it could only prove beneficial. With a strong enough alignment these rights would to all intents and purposes pass onto the PMSE industry.

The Beauty Contest would also provide PMSE with longer-term security than options 1 and 2 (technically 5 years as opposed to 1 years notice), and would ensure continued spectrum management through the switchover period. Ofcom would no longer be paying for the spectrum management function; the industry would via their fees, set by the Band Manager. This means that PMSE fees could be completely restructured to better reflect usage. We believe that this could be a positive step as there are anomalies in the current structure that could be addressed.

The successful Band Manager will need to be more commercially focused and as a result would be in a better position to obtain additional spectrum via the market. This could mean an increase in available spectrum for PMSE. The application of AIP for the Band Manager means that there would be significant incentives to manage the spectrum efficiently. This would in turn filter through to the users and encourage them to make better use of spectrum and find ways of innovating to improve efficiency still further.

The Beauty Contest with AIP option facilitates the introduction of market methods to the PMSE sector whilst providing mid-term stability.

Barriers to success

Whilst the benefits of the Beauty Contest with AIP are numerous; there are issues that need to be considered before we get carried away with the proposition.

Although the licence would be for an indefinite period, there remains the right to revoke subject to 5 years notice. This means that if policies were to change, the Band Manager and therefore PMSE users could be asked to vacate digital interleaved as early as 2014.

Other barriers to the success of the Beauty Contest option are entrenched in the more commercial nature of this new regime. The cost of AIP would have to be passed onto the PMSE users, however in addition to the cost of spectrum the Band Manager would also need to recover their operational costs. This could result in PMSE users paying more than AIP for access.

Whilst at the recent PMSE consultation workshop attendees were assured that AIP would not be prohibitive and was likely to be introduced in phases, the figures are yet to be calculated. This means that it is difficult to know exactly how much the Band Manager will be charged. As highlighted in our analysis of Option 2 we would have thought that the closest comparison would be Broadcasting AIP. This does not currently exist.

If charges were to increase, it is likely that illegal use would rise. Whilst in a non-commercial set-up this is of little significance to the Band Manager, in the commercial one it could severely undermine the viability of the business. One way for the Band Manager to deal with the loss of revenue would be to increase fees for legitimate users. However Ofcom's backstop facility to protect PMSE users from prohibitive costs could prevent the Band Manager from covering its costs. JFMG fully support some kind of back stop facility to protect PMSE users, however how it is applied needs to be carefully considered as it could hinder the Band Manager's ability to recover costs.

The current system works well, in part, because the spectrum manager is not dependent on licence revenue to survive. Previous arrangements where the manager retained the fees did not foster the industry's trust. This is because the motivation behind attending special events was perceived as fees collection rather than ensuring everything was working well. It will be difficult for the Band Manger in this instance to convince customers that they have a genuine interest in the PMSE industry and its well being. This will be further exacerbated by the requirement to demonstrate a willingness to

enable access for other users/uses over time. Even the most dedicated PMSE Band Manager may be forced to provide access to new users, because of Ofcom's requirement to do so, but also to foster a profitable business. This would be most likely if PMSE illegal use was to increase and revenue required from elsewhere.

Finally, we have some concerns regarding the selection process used to determine the successful Band Manager in the first place. Whilst the selection criteria suggested is focussed on selecting an organisation that will benefit the PMSE sector, the suggestion of a second round in the form of an auction appears counter intuitive. Whilst we recognise the need to implement a robust process that ensures objective selection from a number of equally qualified candidates, this idea poses many questions regarding how it would work. For instance, are the bids "real" bids that will need to be paid to Ofcom in addition to annual AIP or will the auction purely be a way of indicating how much an organisation values the spectrum etc? This needs further clarification.

Mitigation Options

Whilst we have listed a number of barriers to success for the Beauty Contest with AIP option we do not think that they are entirely insurmountable. The following paragraphs include some ideas that could be adopted to mitigate the problems highlighted.

The Beauty Contest does provide more security of tenure for the Band Manager and the industry. However the need to open the spectrum to other users over time does to some extent undermine that security. We also feel that the 5 years notice period could leave the industry vulnerable to a change as soon as 2014. To mitigate this risk JFMG would recommend that the same protection as in Option 4 is adopted. This would mean that no matter who the Band Manager or spectrum owner was the PMSE industry would be guaranteed reasonable access to the digital interleaved spectrum until 2018 (10 years security as opposed to 5).

Much of our anxiety about this option lies in the application of AIP. The figure calculated needs to be reasonable, not only so it is attractive to the Band Manager, but also to ensure that they are not forced to pass prohibitive costs onto the downstream market. There are a number of ways to deal with AIP to ensure it does not hinder the PMSE industry or the Band Manager's business case, some of which Ofcom already utilise.

Phasing of AIP for the Band Manager would ensure that the downstream market is unlikely to suffer huge increases in the first year. More gradual increases would allow the industry to get used to the higher fees levels, and factor them into their future plans. If the calculated AIP turned out to be particularly high so as to hinder commercial viability, Ofcom could discount the AIP paid. This could be calculated by subtracting the estimated cost of the Band Manager's operation from the original AIP figure. This would presumably create a much better cost model under which to operate. The design and outcome of the Beauty Contest would no doubt be impacted by such a move. Finally there is always the option to do nothing and allow the Band Manager to address this problem; this could include changing the current billing model for instance.

Whilst the issue of recovering costs of AIP could be left to the Band Manager, the fact that Ofcom would have back stop regulations in place could prove problematic from a commercial point of view. This would be especially difficult to deal with if fees were set, based on covering both the spectrum and operations costs only to find that they are not deemed appropriate by Ofcom. How would the Band Manager deal with this situation? It is therefore an absolute imperative that the back stop regulations leave no room for doubt as to what is and is not reasonable to charge PMSE users. They also need to be in place well in advance of the competition process (as does AIP) in order for the applicants to determine whether it is within their commercial interests to take part.

JFMG believe that one of the fundamental problems arising for any commercial PMSE Band Manager is that of illegal use. There is evidence to suggest there still exists a background level of illegal use in the industry, and there appears to be no incentive at present for these users to legitimise themselves. However reasonable the final AIP figure appears, it is inevitable that fees for digital interleaved spectrum will increase in the future. This is likely to increase the number of "free-riders" and this could, depending on the levels, significantly undermine any business case. If a commercial PMSE

Band Manager is to prosper, either within Option 3 or 4, the problem of illegal use must be addressed. New billing models could be devised, licensing could be simplified, monitoring and enforcement could be stepped up. However, without the full support of the industry it is doubtful whether any of these things would be wholly successful. The industry need to take a stand on this issue by denying work to those who do not licence their equipment. Without a change in attitude the industry are to all intents and purposes legitimising illegal use and hindering the feasibility of a dedicated commercial Band Manager for PMSE.

Ofcom make it clear that they are keen for the successful Band Manager to be trusted by the PMSE community. However, with the requirement to also allow access to new users over time, it is difficult to envisage how this might work in practice. It is therefore important for Ofcom to include clear definitions within the licence regarding the level of access it must provide for PMSE versus other uses. Clear obligations will ensure that both the PMSE industry and the Band Manager know where they stand. These obligations will also need to be determined in sufficient detail prior to the beauty contest.

In addition, the tension of providing sufficient spectrum for PMSE and new users would seem to be increased or lessened depending on the amount of digital interleaved spectrum made available for PMSE. If all of the digital interleaved (except from the local TV compatible lots) was available for PMSE then there would be a fiercer requirement to open the spectrum up for new uses. However, if Ofcom decide that PMSE will have less than this amount it could be argued that the requirement should be removed, or at least reduced. This would be because other uses had been given another avenue with which to access spectrum, and PMSE were already operating within a much reduced allocation. If this were the case it may also remove the requirement to have a second round auction to determine the successful applicant. Whilst this argument works for removing the tension that the Band Manager would suffer between providing access for PMSE and new uses, JFMG would still support PMSE access to the entire digital interleaved spectrum.

Conclusion

Whilst this option appears to reach a perfect compromise between the needs of the industry and Ofcom's objectives, a considerable amount of work will need to be undertaken to bottom out the unresolved issues we have highlighted. However, JFMG still believe that with some work a viable business model that benefits the industry, Ofcom and the Band Manager could be achieved.

Option 4: Auction with safeguards

JFMG agree that the Auction with safeguards option could be a feasible way of introducing the PMSE sector to the market. This would be a huge step forward for the industry to take, and is the most risky out of all the most likely options. Its success would be largely dependent on the auction winner being allied to the sector and having the sufficient expertise to manage PMSE use.

Benefits of auction with safeguards

Although the most risky of the options, the Auction with safeguards would provide PMSE users with a guarantee of at least a further 10 years access to the digital interleaved spectrum. This is by far the longest length of guaranteed access proposed. In addition, the winner of the auction will hold the licence for a minimum of 18 years. If the successful bidder came from the PMSE community, or was committed to providing access to the industry this would potentially provide access until at least 2026.

From a business perspective the 18 year licence would provide a much longer timescale in which to recover the initial investment. It is also possible that the winning bid could be less than the cost of annual AIP. This could result in a more viable business model, where PMSE users may not be charged AIP levels for their access.

This option brings the PMSE industry into the market straight away without hampering their ability to access digital interleaved spectrum. The length of protection provided should be sufficient for users to adapt and prepare for the end of the guaranteed period. Ofcom will no longer have to pay for the management of this spectrum and can allow the Band Manager to set the fees at what they feel to be the correct competitive level. An element of regulation will still remain to ensure the Band Manager

does not set prohibitive fees for PMSE access, so there can be some comfort that users will not get priced out. This option also fully encourages efficiency and innovation in both spectrum usage and management terms.

Barriers to success

This option has the potential to be a huge success for the PMSE industry, however it could also result in failure after the initial 10 year period is over. Some of the areas of concern are identical to those highlighted in the Barriers to success for Option 3.

Whilst we would hope Ofcom's auction process would be robust enough to mitigate it, there remains a risk that the winner of the auction could be an organisation that is neither well aligned with the industry nor experienced enough to manage its spectrum effectively. Although we concede that the enforced protection period would, by default render the digital interleaved spectrum less attractive to outside bidders, there is still a risk that a large enough company may be able to bear this liability for the duration. Such an organisation may not be willing to manage the protection period in a way that would be satisfactory for the PMSE industry.

In addition, the licence will be tradable and liberalised, and so could be utilised for new uses prior to the guaranteed protection end date if the Band Manager saw fit. Whilst the Band Manager would be obliged to provide "reasonable" access for PMSE it is not clear what is meant by "reasonable" access. This is open to much interpretation.

JFMG believe that an auction will create the same concerns regarding the commercialisation of the Band Manager as Option 3. Profit dependent on sales revenue will most definitely undermine trust between the Band Manager and the PMSE user. This will be further exacerbated by the conditions of the licence that allow the spectrum owner to introduce new uses into the digital interleaved spectrum prior to the protection end date.

As for Option 3, any increase in fees is likely to increase illegal use, causing a reduction in revenue. If fees are set at something lower than AIP then there may be a limit to this increase, however it could still lead to levels that undermine the case for a viable business. Although the setting of regulations to ensure PMSE fees are affordable is beneficial to the industry, this could hinder the Band Manager's ability to recover costs if illegal use levels are high. In addition it could force the Band Manager to look elsewhere for revenue (i.e. other uses). This would not benefit the PMSE industry.

One other concern is that in this instance the Band Manager would be taking all of the risks. Whilst they will also retain all of the profits, technological advances in the future could mean that there is a diminishing requirement for the Band Management function.

Mitigation Options

JFMG believe it will be necessary to utilise a number of mitigation techniques to render an auction option feasible for the PMSE industry.

Most importantly it is vital that the terms and conditions of the licence clearly state what "reasonable" access for PMSE is. It would be useful to know if there is a limit to how much of the spectrum could be made available for other uses for instance. Both the Band Manager and the industry need to fully understand what is expected of this arrangement. If these conditions are transparent and clear enough this should go some way to help mitigate the trust issues we have highlighted. In addition, a robust pre-qualification round would further mitigate any anxiety PMSE users may have regarding the auction process. The industry must be confident that the successful Band Manager will have the expertise and the willingness to manage PMSE spectrum effectively during the protection period, and possibly beyond.

In addition the regulations set to protect PMSE costs must be carefully considered. They must seek to balance the industry's need to access reasonable priced spectrum against the Band Manager's financial viability. This leads us back to the issue of illegal use. The mitigation options highlighted for this problem in Option 3 could also be applied for Option 4. However, JFMG believe that a fundamental change in the attitude towards illegal use needs to occur within the Industry, before this

problem can be addressed with any success. Without this change a commercial PMSE Band Manager's role will be severely hampered.

Conclusion

JFMG believe that this option could work as long as the appropriate safeguards have been put in place to protect the PMSE industry. We fully understand however, that this option would take a huge leap of faith. The risks involved may just be a step too far for the industry at present. If this option were selected as the appropriate way forward, JFMG are committed to working with the PMSE industry and Ofcom to ensure a positive result and a smooth transition to the new management regime.

Option 5 and Option 6: Auction with DDR safeguards and Auction with no safeguards

Ofcom have already made it clear in their consultation document that neither of these options will be considered going forward. It is therefore unnecessary for us to comment in any detail on either of them. Our initial thoughts on Option 5 have already been included within our response to the DDR consultation, and JFMG completely agree with Ofcom's decision to discount both 5 and 6 as viable options.

Summary – JFMG agrees with Ofcom's identification and much of the analysis of the options for how the PMSE sector could make use of the digital interleaved spectrum. However we feel that some options may be unworkable as they currently stand from a PMSE sector and/or business perspective.

Whilst Options 1 and 2 may appear to be the easiest and safest for the industry in the short-term, JFMG does not believe that these models can be sustained in the long term as it is unlikely that Ofcom could justify funding this spectrum management function indefinitely. However, these systems could be used to ensure a smooth DSO transition for PMSE. It would therefore follow that any contractual arrangements would need to be in place until at least 2012. Whilst JFMG have some anxieties about the feasibility of Option 2 we believe that the status quo with AIP (if reasonable and phased) could be the first step in the journey towards full market participation. JFMG believe a move to market mechanisms is unavoidable in the long term.

Whilst Option 3 appears to reach a perfect compromise between the needs of the industry and Ofcom's objectives, a considerable amount of work will need to be undertaken to bottom out unresolved issues. However, JFMG still believe that with some work a viable business model that benefits the industry, Ofcom and the Band Manager could be achieved. As the option currently stands this would not be possible.

JFMG believe that Option 4 could work as long as the appropriate safeguards are put in place to protect the PMSE industry. This option provides the PMSE sector with the longest security of tenure, however JFMG believe that this may be a step too far for the industry at present.

JFMG agree with Ofcom's decision to discount Options 5 and 6 from consideration.

We believe that JFMG will be an active and integral participant in whichever management option is finally adopted by Ofcom and will work with them and the sector to ensure continuity during this period of transition.

Question 2): Do you agree that we should offer one package of digital interleaved spectrum?

JFMG agree that one package of digital interleaved spectrum should be offered for PMSE use whichever management mechanism is selected. This will ensure that there are fewer boundary and coordination issues to consider in the management process. One package is also more likely to provide access to contiguous channels for UK touring shows, providing the spectrum allocated by Ofcom allows for this.

It is still important to know how much of the digital interleaved spectrum will be made available for PMSE use as this could hinder a Band Manager's ability to provide access to spectrum throughout the UK. It may also impact on the feasibility of some of the options proposed within the consultation.

Finally one package of spectrum will ensure that there is only one Band Manager for the digital interleaved spectrum, and this is something that the industry has been keen to preserve.

Summary – JFMG agree with Ofcom's proposal to offer one package of digital interleaved spectrum for PMSE use. However the amount and configuration of the spectrum included within the package will need to be carefully considered to ensure UK wide access for PMSE users.

Question 3): *Do you believe that greater licence-exempt use could be made of Channel 70 by PMSE? Are there any obstacles that would need to be overcome first?*

JFMG do not have any reliable evidence on the current level of use of the 863 – 865 MHz band by PMSE. Anecdotal evidence does suggest however that users of 863 – 865 MHz migrate into Channel 69 to avoid interference. Further, our own casual observations indicate widespread use of the band for business applications as well as for cordless audio devices in the home. Both types of application are frequently observed at major events and these would conflict with programme makers' requirements for broadcast quality transmission.

There is only sufficient spectrum to support up to 4 wireless microphones in this band. Even with improved analogue technology (where say intermodulation effects could be ignored) there would still only be sufficient capacity to support a total of up to 6 wireless microphones.

This indicates that there is currently little scope for greater use of the licence exempt spectrum in 863 – 865 MHz, for professional audio applications.

Summary – JFMG does not believe that greater licence exempt use could be made of Channel 70 by PMSE. We believe that there are interference issues that would hinder professional use, with little scope to support more than only a few wireless microphones.

Question 4): *Do you have any comments on the scope for applying the options discussed above to bands other than the digital interleaved spectrum?*

JFMG believe that there is scope for applying the options discussed in the PMSE consultation document to the other PMSE bands that we currently manage. However, we do not feel that any one option can be applied to the other bands in their entirety.

The PMSE spectrum that is utilised ranges from 40MHz to 12GHz, and has varying characteristics and usage rights. With such diversity we believe a combination of options would need to be employed to deal with the bands effectively.

JFMG believe that each frequency band needs to be looked at individually in order to determine which of the options they would be best suited to. We believe there are a number of criteria that need to be looked at in detail when undertaking this process. All of which should help to determine whether the market led options are preferable to the status quo.

Firstly we think it important to know whether the existing AIP Standard Tariff Unit (STU) could be applied to the band or if new AIP would need to be calculated in order to implement Options 2 and 3. It is then vital to determine whether the spectrum rights are clearly defined or not. Much of the PMSE spectrum is used on a secondary basis, most commonly with the MoD. Agreements are in place regarding the type of use allowed, often with geographical restrictions so any move towards the market would require their agreement. As well as clear spectrum rights the bands also require a certain level of security of tenure. Market methods cannot be employed to bands that are at risk of

being lost to new uses in the future, something that has characterised much of the PMSE spectrum in recent years. Finally consideration of the volume of use in each band needs to be taken into account. Heavily used bands would lend themselves better to the market as they would constitute a feasible business model for an auction/beauty contest winner, however those with a low density of use would be unworkable.

After looking at the criteria for the PMSE spectrum we believe that it can be separated into three categories relating to market readiness: “Ready”, “In development” and “Not suitable”. “Ready” means that there are bands that would be ready for the application of Options 3 and 4 now, should they be the favoured option. The “In development” category refers to those bands where Options 3 and 4 could be applied in the future, but where a number of issues will need to be resolved first, and finally there are bands where we believe it will be impossible to employ market mechanisms at any time, these could be referred to as “Not suitable”.

The table below shows our current thinking with regard the most prominent PMSE bands.

Band	Criteria				Current Options	Market Readiness
	STU based AIP valid	Spectrum rights clear	Security of tenure	Volume of activity		
Band I	x	✓	✓	Low	1, 4	Ready (for auction only)
VHF Low Band, UHF 1, 3.5 GHz, 10 GHz	✓	x	✓	High	1, 2	In development (Require clear spectrum rights)
VHF High Band, UHF 2	✓	✓	✓	High	1, 2, 3, 4	Ready (for AIP or auction)
DDR Cleared spectrum	x	x	x	High	1	Not suitable (Migration management only)
1.5 GHz	✓	✓	x	Low	1, 2	Not suitable (Band may be withdrawn)
2.0 and 2.2 GHz	x	x	✓	High	1	In development (Require AIP and/or clear spectrum rights)
5.9 GHz	✓	✓	x	Low	1, 2	Not suitable (Band may be withdrawn)
7 GHz	✓	✓	✓	Low	1, 2	In development (Current activity cannot support AIP or auction)
12 GHz	x	x	?	Low	1	Not suitable

JFMG conclude that whilst there are a couple of bands where market mechanisms could be employed now, others need further work to facilitate its employment in the future. We have also identified a number of bands that, in our opinion may never be suitable for the employment of Options 3 or 4. As a result we believe that there will always be a requirement for residual management of these PMSE bands, either by Ofcom themselves or by the continuation of a contractual arrangement. In addition there will continue to be a diminishing requirement to manage the “In development” bands until they



can be made ready for release into the market. In saying this we are assuming that Options 3 or 4 would be Ofcom's desired outcome.

JFMG will endeavour to continue to support Ofcom with regard the detailed work that will be required to address these issues. In the meantime we would encourage Ofcom to publish by late 2007 how it intends to provide continuity between the end of the current arrangements and the introduction of the preferred new arrangements for not only digital interleaved, but also the other PMSE spectrum. This will avoid disruption to the PMSE sector and provide users with some comfort in this regard.

Summary – JFMG believe that there is scope for applying the options discussed for the digital interleaved spectrum to the other PMSE bands. However we believe that no one option would be suitable for PMSE spectrum in its entirety. JFMG asserts that the PMSE spectrum needs to be dealt with on a band by band basis because of its diverse nature. We believe that some PMSE bands could be dealt with by introducing market mechanisms, although many will need considerable work to do so. JFMG also believes that there is some PMSE spectrum where market mechanisms could never be employed. JFMG believes it is vital that Ofcom publish their plans to provide continuity between the end of the current JFMG contract and the new arrangements for all PMSE spectrum by the end of 2007.