

## 700 MHZ Consultation Response PMSE

### From Brian Copsey

*Question 1: Have we correctly identified and characterised the potential costs set out above, and what other costs – if any – should be taken into account in our assessment?*

No

PMSE users have already had to purchase new equipment after the 800MHz clearance most of which was centred on the 700MHz band. Any further changes by Ofcom must **fully** reimburse the purchase, installation and planning of replacement systems.

In excess of 20% of hire stock held by a number of companies uses this band

With traffic offload by mobile operators onto the 2.4GHz SRD band there is a cost to consumers in loss of service to their R-Lan and internet systems due to this activity: In China this caused the metro to shut down

*Question 2: What evidence, whether qualitative or quantitative, should we obtain and/or take into account in assessing each of these potential costs? Please identify any sources of specific evidence to which we should have regard.*

When replacing a system there are a number of scenarios to consider, the worst is where equipment is in permanent use at a show or studio and continuity of service has to be maintained by carrying out the work between shows, as an example of this, the CH 69 change over cost some 512 man days (excluding travel costs) for some 22<sup>1</sup> permanent events in addition to the costs of the replacement radio microphone equipment. Due to the complexity of a changeover for the loss of the 700 spectrum these figures will be exceeded by a large margin

If the reallocation of the 700MHz band and then the 470-694MHz reorganisation takes place the cost to the multimedia program making industry and subsequently the social, economic and export fabric of the UK will have a cost which far outweighs the perceived benefits of yet more inefficient mobile systems

If the full reallocation takes place:

- manufacturers will incur R&D costs for all system components
- Site owners will incur large costs for re-engineering and installing systems
- ENG and individual owners will also incur cost of re-engineering their systems

A cost which also needs to be quantified is that of the studies and investigations needed to identify replacement spectrum, such costs will be incurred by both Administrations and industry

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<sup>1</sup> This soon exceeds some £7000 per event without transport costs

*Question 3: Have we correctly identified and characterised the potential benefits set out above, and what other benefits – if any – should be taken into account in our assessment*

No

Much greater benefits in both service and costs for the citizens and consumers would be obtained by redesigning and rationalising the mobile networks as a cohesive system which utilised the propagation characteristics of the many bands now available to the that industry ,and thus increasing spectrum and service efficiency without requiring additional spectrum.

Other than for temporary use all backhaul should be cable based not radio links

*Question 4: What evidence, whether qualitative or quantitative, should we obtain and/or take into account in assessing each of these potential benefits? Please identify any sources of specific evidence to which we should have regard.*

Re-examine very carefully the actual case for an increase in spectrum; Canada has stopped its 700 MHz activities to carry out such a survey. Use a company not allied to the mobile industry

Create a software model of a rationalised spectrum efficient network to achieve the maximum throughput to consumer devices, utilising a maximum of shared sites and equipment for the various licence holders. Run this model to obtain the actual spectrum needed over and above the current allocations (it may well be no extra spectrum is required).

Asses the contention ratio's the mobile operators will use to accurately asses the QoS customers will receive

*Question 5: In particular, what is your view of the likely future demand for additional sub-1 GHz spectrum for the provision of mobile data services, and what evidence supports this view?*

The actual demand for “Data” as opposed to the combination of voice and text contained in a digital signal is yet to be proved. Cost will be a major factor and the explosive growth of free R-Lan and potentially WSD will go a very long way to provide access from mobile phones and computers to the NET. Therefore no further increase from the 800MHz band should be considered until a clear economic case (for the citizen) is made

Currently the poor coverage in many parts of the UK due to insufficient network resource, if improved as identified in response to question 3, would likely provide for many years expansion in data requirements

No further sub 1GHz spectrum is required if networks are properly planned and engineered

*Question 6: Should we place different weights on some costs and benefits than on others, for example depending on whether costs would be borne by consumers, DTT operators, or mobile operators?*

Yes

Consumers will be paying (again) for the re-engineering of the DTT network plus the cost of modifying their own domestic insulations with no significant gain in service or TV programming.

PMSE users will face significant costs to re-engineer their systems (again) without any additional gain but simply to keep themselves in business. Simply taking venues such as theatres, studios and nightclubs there are in excess of 10,000 in the UK, if the £7000 per venue were used as a base line the unrecoverable costs to UK media industry exceeds £70,000,000

If the 470-694 clearance also takes place the costs above will be repeated

The mobile operators, after an initial outlay will be receiving considerable profit from their networks, for the life of that network (20 years?)

This again appears a very one sided profit loss balance sheet and should be adjusted to account for future profit to the mobile operators and assistance to those impacted by these

*Question 7: Do you have any other comments on the work we are currently undertaking on potential costs and benefits?*

Yes

Insufficient focus on the real and actual costs to the multimedia program production industry of these reallocations.

No consideration of the costs incurred by the PMSE manufacturing industry in attempting to service their customers without **any clear and concrete facts to work with** (i.e. actual detailed replacement frequencies)

*Question 8: Have we correctly identified the costs and benefits that could vary depending on the timing of release, and the impact of those factors? Are there other costs and benefits which would vary depending on the timing of release of the 700 MHz band which we should take into account?*

No

The PMSE users have expended very large sums of money on reengineering their systems which under previous circumstances have a life of some 20 years, if the early release at 2018 takes place this "life" will be reduced to below 5 years. Placing an unreasonable and in some cases an unsustainable financial burden on users.

Early release will encourage mobile operators to design less spectrum efficient systems for the 800MHz band on the basis that "there is more spectrum in the pipeline"

*Question 9: How quickly could the 700 MHz band be released? What would be the impact on DTT infrastructure costs of releasing at the earliest possible time compared to a later time? What would be the factors which affect these costs?*

IF it is released it should be delayed as late as possible for four main reasons

1. Until the 800MHz networks are full deployed and in heavy use the interferences issue will not be known or understood
2. The spectrum efficiency of the 800MHz networks will determine IF and how much extra spectrum is required for mobile use
3. To postpone additional capital cost to users and enable the maximum benefit from their current expenditure
4. Until the 800 networks are fully operational and full coverage of the UK is achieved it is not possible to gauge the additional capacity required, given the costs to the non-mobile companies and citizens in the current economic climate rushing to satisfy the unreasonable demands of the mobile industry should be carefully examined and delayed until a clear picture of actual demand and the real capacity of the 800 band is known

*Question 10: How, and to what extent, are the costs for existing (PMSE) and potential (WSD) interleaved users of the 700 MHz band likely to vary depending on the timing of release? What would be the factors which affect these costs?*

The latter release (if at all) of the 700MHz and clear identification of replacement spectrum (1200-1680MHz?) will enable more time to develop new systems and equipment. It will also give users better use of their current equipment.

At whatever time the proposed release takes place there will be very heavy costs to PMSE users, it is not possible to quantify those costs without detailed knowledge of the replacement spectrum i.e. will it be within the existing tuning range of their equipment. Early knowledge of the replacement spectrum and certainty of the time scale of use will enable forward planning by the industry and reduce costs

WSD: as Ofcom has stated that PMSE will have priority over WSD, the vast amounts of money currently (and previously) being expended by both Ofcom and industry appear to be a less than efficient use of that resource if little or no spectrum will be available. This will be a much larger waste if the 470-694 band is also allocated to mobile

*Question 11: Should we consider any other cost-related arguments / evidence in favour of an earlier or later release date?*

Yes

Consider the cost benefit of early release if the mobile industry pays all the costs of the PMSE, Broadcast Industry and domestic users

*Question 12: What would be the impact on mobile broadband delivery and competition of releasing the 700 MHz band later rather than sooner?*

Beneficial,

- As the mobile industry would have experience of the actual, rather than theoretical use of the 800MHz spectrum and understand the most spectrum efficient ways to utilize the 700MHz band (if they need it at all).
- In addition Government would have the results of the other broadband delivery mechanisms (fixed, Fibre, WiFi, Cable etc.) in delivering a high speed service to industry and consumer and have an informed view of the overall “jigsaw” required for the UK to benefit from the digital economy

*Question 13: Should we consider any other benefit-related arguments / evidence in favour of an earlier or later release date?*

Actual engagement with those affected may well throw up additional reasons for a latter release date

No comment on Questions 14-19

*Question 14: Is the range of potential dates for release likely to be wide enough to merit consideration of an incentive auction approach?*

*Question 15: If so, what are the challenges to designing an effective incentive auction in this case, and how might these challenges be addressed?*

*Question 16: If we followed an incentive auction approach, how should we take account of wider costs and benefits – i.e. those not felt by participants in the auction?* Implementing Ofcom’s UHF strategy 22

*Question 17: Do you have any views at this stage as to the parameters of an incentive auction, such as the default date and payment mechanism?*

*Question 18: Is there a version of the overlay auction approach which could be suitable for 700 MHz release?*

*Question 19: What are the benefits and risks of conducting an overlay auction in this case?*

*Question 20: Have we correctly identified and characterised the potential impact of 700 MHz release on consumers accessing DTT? What other impact – if any – should be taken into account in order to identify pre-emptive measures to reduce this impact?*

**NO**

Many viewers use aerial amplifiers or view via a communal system it is still unclear (including the quality of the mobile equipment) how these systems and equipment will respond to filtering and re-engineering for the 800band.

Impact in the form of cost and labour must be quantified.

Domestic users will in many cases need to change aerials, Ofcom have not provided any clear guidance to the public other than to use wide band aerials, which enhance the interference.

Impact on cable users has yet to be clearly identified for the 800MHz band and the impact of further mobile use will depend on that knowledge once 800 band networks are fully operational on all their channels and deployment of pico and micro cells

In all cases until the impact of further mobile use and fully deployed mobile networks is known it is difficult to plan.

Fund a complete 700MHz three channel test system at DTG along with pico and mobile units in order to carry out realistic testing. This could also be used for PMSE. It would be reasonable for the cost of the system to come from auction profits or be funded by the mobile operators.

*Question 21: Do you have any comments on the pre-emptive measures relevant to DTT identified above? Are there other pre-emptive measures we should be considering?*

Yes

Without a great improvement in out of band energy performance of all LTE equipment any improvements in TVs or communal equipment will be pointless. To date there is very little positive work on improving the standards or equipment.

A clear requirement for better out of band energy performance must be made a condition of entering any 700MHz auction

*Question 22: Have we identified the correct measures to support consumer adoption of DVB-T2?*

No

The public are under financial pressure on all parts of their lives, in most cases the new format will not give them any great improvement in the viewing experience. If this is mainly to enable mobile use the operators or the auction profits should fund or subsidise new consumer equipment.

*Question 23: What regard, if any, should we have to wider technical evolution of the DTT platform, such as HEVC?*

Greater consideration of basic radio planning is more important, with sufficient guard bands between services not the pathetic 1MHz the mobile industry obtained in the 800 band.

*Question 24: Have we correctly identified and characterised the potential impact of 700 MHz release on PMSE users? What other impact – if any – should be taken into account in order to identify pre-emptive measures to mitigate this impact?*

NO

Before completing the release of the 700 band clear ways forward for PMSE replacement spectrum, which is a major supplier of content to many industries including mobile should have been developed You have provided no clear way forward, only a temporary use of the 600MHz band given the costs already imposed on the industry this not good economic practice for the UK and its citizen's and should be quickly corrected

You State:

5.26 We are currently progressing work to study the impact of different DTT frequency re-plan scenarios if the 700 MHz band were released for mobile services. One of the outputs of this study will assess the impact on availability of geographically interleaved spectrum

The loss of some 168 MHz to the interleaved spectrum and the compacting of the TV channels will have a major impact and whilst the investigation is necessary and a clear map produced to inform users it is unlikely to show sufficient spectrum for major events. How will the temporary demand for large events and very large events be met? This question needs an urgent and quick response to enable industry to plan for the changes both financial and practical

*Question 25: Do you have any comments on the pre-emptive measures identified above? Are there other pre-emptive measures we should be considering?*

Yes

5.28 Based on our initial work on pre-emptive measures that we could take to reduce the potential impact on PMSE users, we have identified the following:

- Support industry efforts to improve PMSE equipment – engaging with PMSE manufacturers and industry to support continued efforts to improve PMSE equipment and its ability to operate in more fragmented GI spectrum, considering technological and cost constraints

Whilst these are “warm words” what exactly do they mean?

What is the practical outcome of these words?

When will this start?

Given the financial advantages to be gained for the mobile operators will they be contributing to the PMSE industry costs?

You State:

Industry messaging – confirm the ongoing availability of 600 MHz for PMSE users and work with industry to promote awareness of equipment operating below the 700 MHz band as less vulnerable to potential future changes in availability of GI spectrum.

Whilst these are “warm words” what exactly do they mean? You state temporary use of the 600MHz band, hardly an incentive to invest in new equipment

You State:

with industry to promote awareness of equipment operating below the 700 MHz band as less vulnerable to potential future changes in availability of GI spectrum.

You made this statement relative to the 800 band allocations why should industry believe them now when the mobile industry has already stated the 700 band is “insufficient for its needs”?

What is the practical outcome of these words?

Legal use of denial of service devices for use at theatres and large events to prevent interference from mobile devices, the aggregate interference of large numbers of these devices will cause interference at events.

*Question 26: Do you have suggestions for how we can assess the impact on PMSE users and equipment if 700 MHz is no longer available for PMSE use?*

Hire companies have some 20% of equipment in this band, I attach as annex A survey carried out by AWPT in Germany clearly identifying 694-790 use, it is reasonable to consider a similar position in the UK.

Engage with PMSE industry and its representative bodies, from these contacts understand all the cost and impact of these changes not the narrow view of equipment only