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**COMMENTS ON THE PRESENTATION OF MASON COMMUNICATIONS  
TO THE BFWA CONSULTATIVE GROUP ON 11 NOVEMBER 2003**

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## **Comments on The presentation of Mason Communications to the BFWA Consultative Group on 11 November 2003**

### **1 Mason Communications' Analysis**

In November 2000, 42 28GHz BFWA licences were offered in 14 regions covering the whole of the UK (three licences per region). However, only 16 licences were sold in 7 of the regions. After a second round of applications from October 2001 to October 2002 no further licences were sold and 26 licences remain unsold. As a response to this, Mason Communications was asked to consider various options for offering the unsold licences in smaller coverage areas. The idea being that smaller licence areas would allow operators to more precisely target high-density areas, thereby making more licences profitable at the current level of reserve prices.

The three options Mason Communications considered were: (i) defining smaller regional licences by political areas (e.g. by county boundaries) or by postcodes (ii) licensing individual base stations, or (iii) letting the operators define licence areas. The two first options share the same idea, in the sense that both these options involve smaller geographical license areas. The third option is fundamentally different since it lets the operators define the license areas.

The analysis of Mason Communication illustrates that redefining the licence areas may not be enough. Mason Communications assumes that reserve prices for the smaller licence areas would be linear in the number of businesses in a particular area. This means that a the reserve price for a licence in a densely populated area would effectively be reduced, since most probably a licence that covers a densely populated area is worth more, per customer, than a licence that covers a less densely populated area. For example, if a company has one customer in an area, it needs to build one base station, its back-haul, plus one set of customer site equipment, plus overheads for billing, operations and administration. If the company adds a second customer, only the customer site costs increase and the fixed costs are then split between two customers. For a third customer, the fixed costs are split between three customers, etc. Therefore expected profits for additional customers increase as the additional customer can be served with the same base station and managerial overhead. In contrast, in the proposals presented, average licence costs per customer are constant, instead of increasing. Since licence costs do not increase with expected profitability more dense areas should become more profitable. However, Mason Communications show that even with licences that cover individual base stations, few licences would be profitable at the level of current reserve prices.

The fundamental problem with the current licenses is that operators cannot make a profit with the current reserve prices. In addition to Mason Communications' suggestion of redefining the licence areas, there appear to be two additional options: to redefine the licence size and/or to lower the reserve prices.

## 2 NERA's Comments

### 2.1 *Smaller blocks of spectrum*

Mason Communications have considered the option of reducing the licence areas. Another option is to offer smaller blocks of spectrum. The current size of blocks of 2\*112MHz is relatively large compared to BFWA licenses in other European countries (but not compared to the US "A" licences). Most countries in Europe are initially allocating 2\*28 MHz or 2\*56MHz blocks, which may be sufficient, at least initially as operators have few customers.<sup>1</sup> Reducing the licences to blocks of 2\*28MHz, and reducing the reserve price proportionally, may in some cases effectively reduce the licence cost per customer by a factor of 4.

It may be feared that with 2\*28MHz licences, there would be 12 operators in an area rather than 3 operators, and therefore make it even harder to have a viable business plan. However, in our view such an argument confuses spectrum allocation with the artificial generation of a market structure. Having 12 licences in a region does not necessarily imply that 12 operators will enter. In fact, in most markets firms can operate without a licence, but only a limited number of firms enter, and yet these firms make a positive profit. A licensed market only limits the maximum allowable number of operators, but that number may not be equal to the maximum number of companies that would be willing to enter into the market.

### 2.2 *Spectrum trading*

It emerges that one concern among current holders of BFWA licences is that they would be disadvantaged if Ofcom decides to offer the unsold spectrum as smaller licences, as suggested above. Spectrum trading is an obvious way to address this concern. By allowing holders of licences to repackage spectrum into smaller pieces (geographically and in terms of blocks of spectrum), current holders of licences could sell any excess spectrum they possess. In the language of the RA/Ofcom, this would correspond to 'trading mode 3', where both change of ownership, reconfiguration and change of use is allowed.<sup>2</sup>

### 2.3 *Implications for design of a BFWA licence auction*

With smaller licences, either geographical or in terms of spectrum blocks, there would be more complementarities between individual licences. Therefore, with smaller licences, there is a need for allowing bidders to aggregate licences in order to create a viable business plan. This could be achieved by using a combinatorial auction.

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<sup>1</sup> See e.g. the response of BT plc to the RA consultation document "Wireless in the information age - delivering interactive multimedia to workplace and home", July 1999.

<sup>2</sup> See RA Consultation Document "Implementing Spectrum Trading", July 2002.

With the seemingly low demand for the BFWA licences, a sealed bid auction is likely to perform best in this environment, in spite of the potentially large number of licences. We would therefore suggest a sealed bid auction with package bids as an allocation procedure for the unsold BFWA licences.

This type of auction was first employed in Peru to determine subsidies for delivering rural telephony services. Also, Nigeria has successfully held a sealed bid combinatorial auction for regional FWA licences.

To summarise, NERA comments that the unsold BFWA licences could be broken up into both smaller geographical coverage areas and smaller spectrum blocks. As a consequence, bidders may want to aggregate licences, which would suggest allocating the licences by a combinatorial auction. Finally, an appropriate form of spectrum trading could be used to address the problem of disadvantaged current holders of BFWA licences.

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