Giuseppe Lopomo
Associate Professor
of Economics

The Fuqua School of Business
Duke University
Box 90120
Durham, NC 27708-0120

Tel (919) 660-7820
Fax (919) 660-7971
glopomo@duke.edu

February 6, 2006

Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

RE: Public Notice, January 31, 2006 (DA 06-238)

To Whom It May Concern:

This letter is written by professors Sandro Brusco of State University of New York – Stony Brook, and Giuseppe (Pino) Lopomo of the Fuqua School Business, Duke University. We are both associate professors of economics; we teach and conduct research in areas that include auction theory and mechanism design. More information about our credentials can be found at:

http://www.sunysb.edu/economics/people/faculty/sbrusco.html
and
http://www.fuqua.duke.edu/faculty/alpha/lopomo.htm

We are writing to provide comments on Public Notice DA06-238, dated January 31, 2006. In particular, we want to focus on the proposed modifications that pertain to the amount of information made available to the bidders during the course of a given simultaneous multiple round (SMR) auction, described in Section 2, pages 6 and 7.

We believe that these modifications are likely to be beneficial at this point in time, and agree with the economic and strategic arguments that have been provided to support the change. Our opinion is based upon a body of scientific research in economics that has analyzed both theoretically and empirically the possible outcomes of SMR auctions.

The possibility of "collusion via signaling" in SMR auctions has been theoretically analyzed by, among others, Brusco and Lopomo (2002), and Engelbrecht-Wiggans and Kahn (2005). This research shows that, in the standard SMR auctions, the bidders can use their early bids to convey information about their relative preferences over different licenses and thus manage to each buy a small set of licenses at relatively low prices. This form of collusion is easiest when the entire history of bids and identities is disclosed, because in this case any bidder can observe any deviation from a cooperative plan and punish with retaliatory bidding. Also, the more information is disclosed to the bidders during the course of the auction, the easier it is for them to coordinate on a way of splitting the licenses that is satisfactory for all participants.

The empirical relevance of these collusive strategies has also been established by, among others, Cramton and Schwartz (2000, 2002), and Bajari and Fox (2005). These papers

perform econometric analyses of one or more FCC spectrum auctions, and provide evidence of low price equilibria. Finally, collusion in auctions with small numbers of bidders and objects has been observed in experiments, as documented by Kwasnica and Sherstyuk (2002).

The proposed change would limit the amount of information disclosed to bidders during the auction process. According to the new rules, only the highest bid on each license at each round would be made public, and the identity of the highest bidder would be kept confidential. This should make it more difficult to coordinate on low-price equilibria.

Restricting the information made available to bidders is not without cost. In particular, in the presence of significant uncertainty about the technology and thus the actual market value of the licenses for sale, releasing information about the behavior of others can help bidders to better assess the value of different combinations of licenses, and thus lead to a more efficient outcome. This may have been the case for the early years of the spectrum auction. However, more than a decade has passed since the introduction of the SMR, and the industry has reached a level of maturity for which the benefits in terms of economic efficiency stemming from maximal information disclosure are likely to be considerably diminished.

On the other hand, it is likely that bidders now have a solid understanding of the auction rules, and are thus more capable of coordinating on low-price equilibria. Thus, we believe that, at this point in time, the proposed change would have a net beneficial effect. It would limit the opportunities for collusion, without seriously impairing the circulation of efficiency-relevant information.

We hope our comments are helpful.

Sincerely,

Sandro Brusco and Giuseppe Lopomo

References

S. Brusco and G. Lopomo, “Collusion via Signaling in Simultaneous Ascending Bid Auctions with Heterogeneous Objects, with and without Complementarities”, *The Review of Economic Studie*s (2002) 69: 407-436.

R. Engelbrecht-Wiggans and C. Kahn, “Low Revenue Equilibria in Simultaneous Ascending Price Auctions”, (2005), *Management Science*, (51) 3: 356-371 2005.

A. Kwasnica and K. Sherstyuk “Collusion and equilibrium selection in auctions”, 2002, forthcoming at *The Economic Journal*

P. Cramton and J. Schwartz “Collusive Bidding: Lessons from the FCC Spectrum Auctions,” *Journal of Regulatory Economics*, (2000) 17, 229-252.

P. Cramton and J. Schwartz “Collusive Bidding in the FCC Spectrum Auctions,” *Contributions to Economic Analysis & Policy*, (2002) 1:1, www.bepress.com/bejeap/contributions/vol1/iss1/art11.

P. Bajari and J. T. Fox “Complementarities and Collusion in an FCC Spectrum Auctions,” NBER working paper 11671, October 2005.