

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20554**

In the Matter of	)	
	)	
Auction of Advanced Wireless	)	AU Docket No. 06-30
Services Licenses	)	
(Auction No. 66)	)	

**COMMENTS OF  
UNITED STATES CELLULAR CORPORATION**

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## SUMMARY

United States Cellular Corporation ("U.S. Cellular") commends the FCC for moving forward with the AWS-1 license auction. Commercial use of this spectrum will be important to consumers, the wireless industry and the nation. With an effective auction design, smaller bidders are likely to contribute to new AWS technologies and services and to bid aggressively on certain licenses.

The proposed band plan and use of the FCC's standard single simultaneous multi-round ("SMR") auction format reasonably promote the statutory requirements and goals regarding opportunities for smaller bidders. However, the proposal to conceal information about bids and bidders would impair competitive bidding, especially for smaller bidders. This risky, large, high-stakes auction is not the place to try out untested rules involving package bidding or concealing bid information.

Specifically, the Bureau's belief is correct that a single standard SMR auction would be superior to concurrent SMR and package bidding ("SMR-PB") auctions. The "threshold problem" (bias against small bidders) is inherent in package bidding, and there is no evidence that the "exposure problem" would be serious with the proposed band plan. The REAG blocks already provide very large geographic packages for bidders seeking such aggregations, eliminating the rationale for package bidding; larger bidders have no significant "exposure" problem. Package bidding would foster less competition for the licenses in the SMR-PB auction and impose an extra burden on bidders in the SMR auction. Concurrent actions would create a new "exposure problem" for bidders participating in both the SMR and SMR-PB auctions.

Disclosing the bids and bidders in each round as well as the bidding eligibilities would promote the legitimate needs of bidders and likely maximize auction revenues. The FCC's rules on anti-collusion, fixed bid increments and bid withdrawals as well as enforcement

actions by the FCC and Justice Department substantially decrease the likelihood of collusion in Auction No. 66; there have been no serious allegations of collusive bid signaling in recent auctions. There is substantial uncertainty about technologies, services, inter-carrier service arrangements, providers, market structures and timing in this new band of spectrum. Auction No. 66 is unlike a repeat auction of licenses in the relatively mature PCS spectrum. Smaller bidders in particular need information about providers in adjacent areas for technology compatibility and roaming. In addition, smaller bidders may assign lower values to markets in regions dominated by a few larger carriers compared to regions with several other smaller carriers, and may learn about values in uncertain markets by assessing the bids by credible versus less credible bidders. Smaller bidders lack the more sophisticated competitive intelligence and analytical compatibilities of larger bidders.

Requiring guessing by bidders complicates the auction process and lessens the chance of an efficient allocation of spectrum. By increasing risks for all bidders, concealing this information would likely result in lower prices compared to an auction with the FCC's standard disclosures. The consequence of such a loss of transparency would outweigh any marginal improvement in deterring collusion.

Why make changes (in a procedure which has worked well in the past, and been carefully refined over time) which will definitely create new problems (especially for regional and small competitors), when it is not even clear that the "problems" the changes are meant to address currently exist?

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**Introduction**

United States Cellular Corporation ("U.S. Cellular") commends the FCC for moving forward with the AWS-1 license auction. U.S. Cellular has been a leader in providing reliable, advanced wireless services using cellular and PCS spectrum in several areas.<sup>1</sup> Assuming that the FCC applies an effective auction design, U.S. Cellular plans to bid on AWS-1 licenses, with the intent of providing new services using innovative technologies.

The Bureau's proposal of a single SMR auction<sup>2</sup> reflects its extensive experience with wireless auctions and the earlier proceeding on the AWS band plan.<sup>3</sup> This proposal reasonably promotes the statutory requirements and balances the interests of smaller and larger bidders. The FCC has already decided to offer packages of geographic areas through the EA and REAG licenses.

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<sup>1</sup> See, e.g., the following U.S. Cellular press releases: "Spanish Language Data Services Debut on U.S. Cellular" (Aug. 29, 2005); "Chicago-based Jabra and U.S. Cellular Partner to Meet Growing Demand for Hands-Free Mobile Solutions" (July 7, 2005); "U.S. Cellular Introduces SpeedTalk" (July 7, 2005); "Qpass Signs U.S. Cellular as New Customer" (Mar. 16, 2005); "Mobile AOL(R) Instant Messenger(TM) (AIM(R)) Service Now Available to U.S. Cellular Customers" (Mar. 15, 2005).

<sup>2</sup> Auction of Advanced Wireless Services Licenses Scheduled for June 29, 2006, Public Notice DA 06-238 (Jan. 31, 2006) ("AWS Auction Procedures").

<sup>3</sup> Service Rules for Advanced Wireless Services in the 1.7 GHz and 2.1 GHz Bands, 18 FCC Rcd 25162 (2003), recon., 20 FCC Rcd 14058 (2005) ("AWS Service Rules").

In prior comments, U.S. Cellular has pointed out problems in SMR-PB auctions, especially for smaller bidders; these comments included statements by leading auction economist Professor Robert J. Weber.<sup>4</sup> The Bureau's belief is correct that a concurrent SMR-PB auction is not necessary to assemble desired packages and would introduce harmful complexity and uncertainty.<sup>5</sup>

On the other hand, the Bureau incorrectly proposed that disclosure of its standard information about bidders and bids would be unnecessary and detrimental to this auction.<sup>6</sup>

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<sup>4</sup> See, e.g., Comments and Reply Comments of U.S. Cellular in Public Notice Requesting Comment on Experimental Design for Examining Performance Properties of Simultaneous Multiple Round Spectrum License Auctions With and Without Combinatorial Bidding, DA 05-1267 (June 1, 2005; June 15, 2005); Ex Parte Presentation and Comments of U.S. Cellular in Service Rules for Advanced Wireless Services in the 1.7 and 2.1 GHz Bands, WT Docket No. 02-353 (Apr. 29, 2005; Dec. 8, 2004; Feb. 7, 2003); Comments of U.S. Cellular in Auction of Licenses in the 747-762 and 777-792 MHz Bands, Report No. AUC-02-31 (Feb. 19, 2002); Comments of U.S. Cellular in Reallocation and Services Rules for the 698-746 MHz Spectrum Band, GN Docket No. 01-74 (May 15, 2001); Reply Comments of U.S. Cellular in Auction of Licenses in the 747-762 and 777-792 MHz Bands, DA 00-1075 (June 16, 2000).

<sup>5</sup> AWS Auction Procedures at 5:

The Bureau believes the offering all licenses in a single standard SMR auction will provide bidders with the simplest and most flexible means of obtaining single AWS-1 licenses or aggregations of AWS-1 licenses. A single auction will apply a single set of familiar rules to all bidders, bids and licenses. Bidders interested in licenses in several blocks will not have to try to manage their bidding activity and eligibility across two auctions, as they might if the different blocks were offered in two different auctions.

Furthermore, we believe that an SMR auction format, together with a band plan which offers bidders the option to bid on several blocks of large regional licenses, will provide bidders with the opportunity to create efficient aggregations of licenses without creating the difficulties that a package bidding format may introduce for bidders trying to win single licenses or smaller groups of licenses. We, therefore, propose to offer the 1,122 AWS-1 licenses in one SMR auction without package bidding.

<sup>6</sup> Id. at 6-7.

While in this Public Notice the Bureau recognized the benefits of such information in auctions with market uncertainties, the Bureau underestimated the uncertainties that exist for the AWS-1 licenses.

In contrast to Auction No. 58 (the fifth auction of C block and fourth auction of F block broadband PCS spectrum),<sup>7</sup> Auction No. 66 is not merely offering more spectrum in the relatively mature PCS market. The AWS-1 spectrum band has no deployed CMRS services, no infrastructure equipment or handsets are available, and no service providers or inter-carrier service arrangements exist. The auction may or may not be dominated by large carriers or carriers deploying certain technologies; it may or may not attract un-informed speculators or legitimate new entrants looking to provide innovative services.

Smaller bidders, in particular, have legitimate needs for the standard information about bidders and bids in this risky, large, high-stakes auction. There is a large risk that the technologies for this spectrum will not be so flexible as to make the identities of providers in adjacent markets irrelevant. Consequently, the values of licenses to smaller bidders will depend on the identities of providers serving adjacent areas and the market structure in the region. Having to guess at this crucial information during an auction adds to the risks faced by bidders. By increasing risks for all bidders, concealing this information would likely suppress auction prices. The FCC has already decreased the likelihood of collusion through its rules on anti-collusion, fixed bid increments and bid withdrawals as well as enforcement actions. The FCC should maintain its standard information disclosures for this important auction.

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<sup>7</sup> Broadband PCS Spectrum Auction Scheduled for January 12, 2005 (Auction No. 58), 19 FCC Rcd 19945 (2004).

U.S. Cellular strongly supports the prompt auction of the AWS-1 licenses commencing on June 29, 2006 as scheduled. We agree with Chairman Martin and Commissioners Copps and Adelstein that the public interest in having additional commercial spectrum for broadband services demands auctioning the AWS-1 licenses starting on June 29, 2006.<sup>8</sup> The FCC should avoid delays for last-minute rule changes. The time from release of this Public Notice to the scheduled start of the auction is only five months. The FCC should not rush into risky, untested auction procedures, thereby abandoning effective, tested rules for a single SMR auction with full disclosures of bidders and bids.

**I. THE FCC SHOULD PROMOTE OPPORTUNITIES FOR SMALLER BIDDERS THROUGH A SINGLE STANDARD SMR AUCTION WITH STANDARD DISCLOSURES ON BIDS AND BIDDERS.**

Congress directed the FCC in auctioning spectrum licenses to promote "economic opportunity and competition" and to disseminate licenses "among a wide variety of applicants including small businesses, rural telephone companies, and businesses owned by members of minority groups and women."<sup>9</sup>

To further these statutory requirements, the FCC developed the AWS band plan with a variety of license sizes -- CMA, EA and REAG geographic areas as well as 10 MHz and

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<sup>8</sup> See AWS Service Rules, statement of Chairman Martin ("Adoption of this order will allow the Commission to move forward expeditiously to auction 90 MHz of wireless spectrum."); Implementation of the Commercial Spectrum Enhancement Act and Modernization of the Commission's Competitive Bidding Rules and Procedures, FCC 06-8 (rel. Feb. 3, 2006) (Further Notice of Proposed Rulemaking), statement of Commissioner Copps ("The AWS auction will be one of our largest in years. We need not delay this auction - which holds great promise for bringing new wireless services to American consumers."), statement of Commissioner Adelstein ("commenters and indeed our own Commission staff are forced to work within an incredibly aggressive schedule to try to finalize this proceeding sufficiently in advance of the June 29, 2006, AWS auction date").

<sup>9</sup> 47 U.S.C. §§ 309 (j)(3)(B), 309 (j)(4)(C) and (D).

20 MHz licenses. The FCC concluded that auctioning this variety of license sizes would be beneficial for carriers of various sizes, including entities interested in localized service areas and small, rural markets.<sup>10</sup> The FCC thus recognized both the statutory mandates and the important roles of smaller entities in developing and deploying AWS services.

In the AWS-1 frequencies, the industry anticipates technologies and services not yet developed. According to Professors William Rogerson (former FCC Chief Economist) and Robert Weber, the market will benefit from having many carriers -- including smaller carriers -- deploying various network and handset technologies as well as service offerings.<sup>11</sup> The market performance of U.S. Cellular and other carriers has demonstrated that smaller, regional carriers can contribute significantly to competition and innovation in wireless services.<sup>12</sup>

The auction design issues considered in this proceeding should also promote the openness of the AWS-1 auction to smaller bidders.

As the Bureau recognized, "a single standard SMR auction will provide bidders with the simplest and most flexible means of obtaining single AWS-1 licenses or aggregations of

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<sup>10</sup> AWS Service Rules at paras. 11-21.

<sup>11</sup> See Paper by Professor William Rogerson: "Regional/rural carriers serving small geographic areas provide an important source of competition, variety, and diversity in rural and less dense areas." (attached to comments filed by U.S. Cellular in GN Docket No. 01-74 (May 15, 2001); "Rogerson"); Paper by Professor Robert Weber attached to comments filed by U.S. Cellular in DA 05-1267 (June 1, 2005) (long-term benefits of diverse wireless carriers in technology deployment and competition).

<sup>12</sup> See recent accomplishments of U.S. Cellular cited in note 1 supra; Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services ("Tenth Report"), FCC 05-173, at paras. 114, 121 (2005) (EV-DO deployments of ALLTEL and Midwest Wireless; Clearwire's launch of mobile broadband services using OFDM technology).

AWS-1 licenses."<sup>13</sup> Introducing SMR-PB would deter the full participation of smaller bidders in this important auction. As described in Section II infra, package bidding would subject smaller bidders to the "threshold problem," and running concurrent SMR and SMR-PB auctions would introduce a new "exposure problem." Together with the complexity and uncertainty of concurrent SMR and SMR-PB auctions, these problems would deter many bidders from bidding on the SMR-PB licenses.

The FCC should not distort the careful balance of small and large licenses it specified in the band plan by carving off some licenses (even just the REAG licenses) and subjecting them to SMR-PB. Because of the problems of untested package bidding rules, some bidders will be deterred from going after the SMR-PB licenses. While the largest bidders would face less competition as they assemble new packages of the SMR-PB licenses, other bidders would face fewer opportunities and more demand in the SMR licenses. This extra burden on smaller bidders would be contrary to the statutory requirements and undermine the balanced band plan established for AWS-1.

The statutory provisions on opportunities for smaller bidders also guide the FCC to make the standard disclosures on bids and bidders for this auction. As described in Section III infra, smaller bidders approach the AWS-1 auction with great uncertainties about the technologies, services, inter-carrier service arrangements, providers, market structures and timing surrounding this new spectrum.

The risks of participating in this auction are high for smaller bidders. Smaller bidders lack the more sophisticated market intelligence and analytical capabilities of larger bidders. Given the uncertainties, smaller players need to know that they are bidding for

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<sup>13</sup> AWS Auction Procedures at 5.

spectrum desired by credible, technologically-compatible operators and not solely by speculators. Smaller bidders also need to know that they are bidding on markets adjacent to carriers likely to deploy compatible technologies, and in regions not dominated by a few large carriers.

In this risky, large, high-stakes auction, smaller players would be disproportionately harmed by concealing the standard disclosures on bids and bidders. The FCC has taken other actions to deter collusion, including rules on anti-collusion, fixed bid increments and bid withdrawals as well as enforcement actions. Evidence of collusion in some early FCC auctions does not mean that, with these changed rules and conditions, collusion will affect the AWS-1 auction.<sup>14</sup> The FCC should allow these measures (some of which were just adopted in January 2006) to work without concealing information that is necessary for the full participation of smaller bidders in the AWS-1 auction. The proposed concealment rules are untested and will clearly harm smaller bidders. Such an important auction should not be the forum the FCC utilizes to determine that the harms to smaller bidders caused by the new rules clearly outweigh any benefits with regard to minimizing collusion.

The federal government has worked very hard to identify and make available a significant amount of AWS spectrum. The auction should not be tainted by the uncertainties and anti-small-bidder bias of these proposed new rules for any portion of this spectrum. The FCC's band plan for AWS-1 reasonably balances the interests of smaller and larger bidders. The FCC should not undermine full participation of smaller bidders in this auction by using SMR-PB or concealing standard information on bids and bidders.

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<sup>14</sup> The case studies cited by the Bureau, AWS Auction Procedures at 6 n. 22, involve some early FCC auctions before the rule changes and enforcement actions, or some small European auctions.

## II. CONCURRENT SMR AND SMR-PB AUCTIONS WOULD BE INFERIOR TO A SINGLE SMR AUCTION.

The AWS band plan reasonably balances the interests of smaller and larger bidders. The Bureau correctly observed that a single SMR auction of these various licenses would meet the needs of smaller and larger bidders, with interests ranging from a single small license to a large aggregation of spectrum covering a large geographic area.<sup>15</sup>

The REAG blocks provide very large geographic aggregations. SMR-PB procedures are not needed to address any "exposure problem"<sup>16</sup> for the AWS-1 licenses. The REAGs allow larger bidders to acquire vast licensed areas without the "exposure problem" that might exist in a SMR auction with only small licenses.

There is no evidence that the "exposure problem" would be serious in a single SMR auction with the proposed band plan. In earlier FCC auctions involving smaller licensed areas for PCS spectrum, some large bidders succeeded in assembling licenses covering most of the nation. The AWS-1 band plan makes bidding on such aggregations far easier and less risky than in earlier auctions.

Conversely, SMR-PB procedures for some of the AWS-1 licenses would create many problems. Economists have pointed to major flaws in proposal after proposal for package auction rules.<sup>17</sup> Auction 51 failed to attract significant interest and did not provide real-world

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<sup>15</sup> AWS Auction Procedures at 5.

<sup>16</sup> "The 'exposure problem' arises when a bidder obtains part, but not all, of the preferred package but spends more for the obtained pieces than they are worth to him." J. Goeree & C. Holt, "Comparing the FCC's Combinatorial and Non-Combinatorial Simultaneous Multiple Round Auctions: Experimental Design Report" at 9 (Apr. 27, 2005) (prepared for the FCC and released in DA 05-1267).

<sup>17</sup> See K. Hoffman, "Issues in FCC Package Bidding Auction Design" (Nov. 22, 2003) (presented at the FCC's Combinatorial Bidding Conference Nov. 21-13, 2003); D. Porter, et  
(cont'd)

experience on SMR-PB for the large, high-stakes AWS-1 auction. The FCC recognized its need for guidance on many SMR-PB rules, commissioned a study, but has not yet disclosed any results or received any public comment on this study.<sup>18</sup> It is premature for the FCC to jump into SMR-PB for AWS-1.

The lack of experience and tested rules is particularly glaring for concurrent SMR and SMR-PB auctions. The added complexity and uncertainty of the concurrent SMR and SMR-PB auctions would harm most bidders (all but the largest bidders intending to aggregate REAG licenses). Even if smaller bidders do not intend to bid in the SMR-PB auction for aggregations of REAG licenses, they could be harmed by the concurrent auctions in several ways.

The "threshold problem"<sup>19</sup> is inherent in SMR-PB auctions and is a bias against all but the largest bidders. Because of this problem, a bidder interested in acquiring one or two REAG licenses may have a better chance of winning in a SMR auction than in a SMR-PB auction. If some REAG licenses are carved off for the SMR-PB auction, then such a bidder may

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al., "Combinatorial Auction Design" (June 17, 2003) (presented at the FCC's Combinatorial Bidding Conference Nov. 21-23, 2003); L. Ausubel, P. Cramton & P. Milgrom, "The Clock-Proxy Auction: A Practical Combinatorial Auction Design" (forthcoming in P. Cramton, et al., Combinatorial Auctions (2006)); L. Ausubel & P. Milgrom, "Ascending Auctions with Package Bidding" (June 7, 2001) (presented at the FCC's Combinatorial Bidding Conference Oct. 26-28, 2001).

<sup>18</sup> See Comment Sought on Experimental Design for Examining Performance Properties of Simultaneous Multiple Round Spectrum License Auction with and without Combinatorial Bidding, 20 FCC Rcd 8685 (2005). The public comments filed in DA 05-1267 noted the limited applicability of any findings from such a small experiment to a large, real-world auction like the one involving 1,122 AWS-1 licenses. Any findings by the experimenters should be subject to public comments before the FCC relies on them.

<sup>19</sup> "This is known as the 'threshold problem.' . . . [In a package bidding auction,] the positive effect of an increase in one small bidder's bid for other small bidders creates incentives for small bidders to "free ride," i.e., to let others bear the costs of outbidding the package bidder. Moreover, small bidders face a coordination problem in that their combined total bid needs to rise to overthrow the package bid, but an increase that overshoots the minimum required amount is wasteful from their point of view." Id. at 9-10.

be forced to bid more aggressively on the remaining REAG, EA and perhaps even CMA licenses available in the SMR auction. This distortion would increase the prices of the SMR licenses, resulting in an extra burden on smaller bidders that may deprive them of licenses or increase their costs.

To illustrate this problem, suppose that an auction offered two blocks of spectrum covering the nation, one block divided into two regions and the other block divided into four areas. Areas 1 and 2 fall within Region 1, and Areas 3 and 4 fall within Region 2. The auction attracted seven bidders, and their maximum values for the licenses are shown in the following table:

Bidders' Maximum Values for Licenses

<u>Bidder</u>	<u>Region 1</u>	<u>Region 2</u>	<u>Area 1</u>	<u>Area 2</u>	<u>Area 3</u>	<u>Area 4</u>
A	0	0	5	0	0	0
B	0	0	0	5	0	0
C	0	0	0	0	5	0
D	0	0	0	0	0	5
E	12	0	6	6	0	0
F	0	12	0	0	6	6
G	9	9	4.5	4.5	4.5	4.5

Bidders A-D are smaller, interested in only one area license each; Bidders E and F are larger, interested in one region each (via a single region license or two area licenses); and Bidder G is the largest, interested in national coverage (via two region licenses or four area licenses).

The efficient (value maximizing) allocation of the licenses would be: Bidder A gets Area 1, Bidder B gets Area 2, Bidder C gets Area 3, Bidder D gets Area 4, Bidder E gets Region 1, Bidder F gets Region 2, and Bidder G gets no license. This allocation results in an aggregate value of the licenses of 44.

Now suppose that the Region 1 and Region 2 licenses were made available through a SMR-PB auction, and the area licenses were made available through a concurrent SMR auction. Bidder G would submit a bid of up to 18 for the package of Region 1 and Region 2. Even though Bidders E and F in combination value the two regions in an amount greater than Bidder G's highest bid for them, they may not be able to overcome the "free rider" effect or coordinate their bids on individual regions to top Bidder G's bid on the package. (This is the "threshold problem" or anti-small-bidder bias inherent in package bidding.) Recognizing that they will lose out on the regional licenses, Bidder E bids on and wins Areas 1 and 2, while Bidder F bids on and wins Areas 3 and 4. The resulting allocation of licenses is inefficient, with a maximum value of 42 (compared to 44 without the SMR-PB auction). Moreover, the small bidders won no license under the concurrent format, compared to winning four area licenses without the SMR-PB auction.

In addition to the "threshold problem," bidders may be deterred from the SMR-PB auction because of a form of "exposure problem" arising from the concurrent auctions. A SMR-PB bid that is not a winner in the round when submitted may emerge as a winner in a subsequent round because of the actions of other bidders. This outcome would not be transparent to the bidder, but the bidder could not withdraw the SMR-PB bid after the round in which he submitted it closed.<sup>20</sup> Because his SMR-PB bid was initially unsuccessful, the bidder may adopt a strategy of concurrent activity on individual licenses in the SMR auction. He would then be exposed to the risk of becoming the high bidder for a set of licenses different from what he sought, some in the SMR-PB auction and others in the SMR auction. Again, the risk of this problem would deter

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<sup>20</sup> AWS Auction Procedures at 19. See note 26 infra.

some bidders from pursuing the SMR-PB licenses, leading to less opportunity or extra costs for the smaller bidders seeking the SMR licenses.

Another harm of SMR-PB to smaller bidders comes from their interest in assessing the market structure and other providers in certain areas and adjacent areas, and learning how credible, technologically-sophisticated bidders value certain licenses. The complexity of assessing the bids in concurrent SMR and SMR-PB markets falls more heavily on smaller bidders that lack the resources for market intelligence and analytical tools available to larger bidders.

In summary, the FCC has recognized that package bidding involves substantial risks that at best require careful design of auction rules.<sup>21</sup> The FCC has already addressed most concerns regarding the exposure problem for large bidders in this auction by defining REAG licenses for three spectrum blocks aggregating to 40 MHz, and EA licenses for two spectrum blocks aggregating to 30 MHz. Critical design issues remain open for any package bidding in this auction. With a short comment cycle, no close real-world experience and high stakes, the FCC should not apply SMR-PB to any AWS-1 licenses.

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<sup>21</sup> See Auction for Licenses in the 747-762 and 777-792 MHz Bands, 15 FCC Rcd 11526, at 11532 (2000) (Auction 31; "allowing an unlimited number of packages could be needlessly complex, and could facilitate strategic bidding"); Comment Sought on Experimental Design for Examining Performance Properties of Simultaneous Multiple Round Spectrum License Auction with and without Combinatorial Bidding, 20 FCC Rcd 8685 (2005); note 17, supra. See also P. Klemperer, "What Really Matters in Auction Design," 16 J. Econ. Perspectives 169 (2002).

The FCC has not disclosed any information to the public about whether it commissioned the package bidding experiment that was subject to public comments in DA 05-1267, and if so what the experimenters found. The public comments noted the limited applicability of any findings from such a small experiment to a large, real-world auction like one involving 1,122 AWS-1 licenses. Any findings by the experimenters should be subject to public comments before the FCC relies on them.

### III. **DISCLOSING THE BIDS AND BIDDERS EACH ROUND AS WELL AS THE BIDDING ELIGIBILITIES WOULD PROMOTE THE LEGITIMATE NEEDS OF BIDDERS AND LIKELY MAXIMIZE AUCTION REVENUES**

U.S. Cellular agrees with the FCC's objective of minimizing collusion in auctions. Collusion could not only reduce auction revenues, but also impede the opportunities of non-colluding bidders. Unfortunately, some of the FCC's early auctions were tainted by collusive bidding.<sup>22</sup> However, there is no evidence that the revelation of bidder identities and all bids in each round has, in itself, led to collusion (and lost revenues) in recent auctions.

The FCC and Justice Department have taken several strong steps to decrease the chance that collusive bidding will occur in the AWS-1 auction.

First, investigations into past auction bidding have resulted in substantial penalties and consent decrees.<sup>23</sup> These actions have sent strong signals to bidders that bidding conduct will be scrutinized; government agencies will apply sophisticated analyses, document requests and depositions to detect collusive bidding; and penalties will be imposed. It is significant that no investigation found collusive bidding after Action No. 11 based solely on bid signaling without other collusive communications outside the bids, such as telephone calls between bidders.

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<sup>22</sup> See case studies cited by the Bureau in AWS Auction Procedures at 6 n.22.

<sup>23</sup> See Letter to Mr. Colby M. May on behalf of TCCSA, Inc., d/b/a Trinity Broadcasting Network, DA 05-2445 (2005) (Auction No. 81); Northeast Communications of Wisconsin, 18 FCC Rcd 17672 (2003) (Auction No. 44); Star Wireless, LLC, 18 FCC Rcd 17648 (2003) (Auction No. 44); US WEST Communications, 14 FCC Rcd 8816 (1999) (Auction No. 11); Western PCS BTA I Corporation, 13 FCC Rcd 8305 (1998) (Auction No. 11); Mercury PCS II, LLC, 12 FCC Rcd 17970 (1997) (Auction No. 11).

As for Justice Department consent decrees, see U.S. v. 21<sup>st</sup> Century Bidding Corp., Civil Action No. 1:98CV02752 (1998) (Auction No. 11); U.S. v. Mercury PCS II, LLC, Civil Action No. 1:98CV02751 (1998) (Auction No. 11); U.S. v. Omnipoint Corp., Civil Action No. 1:98CV02750 (1998) (Auction No. 11).

Second, the FCC made several rule changes. It clarified its anti-collusion rule in 2001, including requiring all auction applicants to report prohibited discussions or disclosures regarding bids or bidding strategies to the FCC in writing immediately.<sup>24</sup> The auction rule whereby the FCC specifies fixed bid increments eliminates code bidding and limits other forms of bid signaling.<sup>25</sup> Furthermore, the auction rules limiting bid withdrawals and increasing the limit on interim withdrawal payments and additional default payments curtail other forms of collusive bidding.<sup>26</sup> The FCC just adopted some of these rules to strengthen the integrity of the auction process, and it should allow them to work in auctions before jumping to adopt further anti-collusion measures which will harm smaller bidders.

The Bureau is proposing to crack down on opportunities for the type of collusive bid signaling that has not been found by the FCC or Justice Department since Auction No. 11,

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<sup>24</sup> Amendment of Part 1 of the Commission's Rules - Competitive Bidding Procedures, 16 FCC Red 17546 (2001). Concealing bidder identities during the auction may impede bidders' ability to comply with the anti-collusion rule. Without knowing bidders' identities and their activities, how will bidders and companies with attributable interests know what communications are allowed, including under the exceptions for permissible joint bidding arrangements? The Public Notice indicates that Bureau is aware of this issue and will "solve" it, but the "solution" has not been subject to public comment, or even made public. ("Bidders will be made aware of other bidders with whom they will not be permitted to discuss bidding strategies for the purpose of complying with the Commission's anti-collusion rules." AWS Auction Procedures at 7 n.30.) The "solution" in the context of the broad concealment proposed by the FCC may cause bidders to forgo communications or arrangements permitted under 47 C.F.R. §1.2105(c), or otherwise have detrimental effects on the auction process.

<sup>25</sup> AWS Auction Procedures at 15-17.

<sup>26</sup> Id. at 18-19; Implementation of the Commercial Spectrum Enhancement Act and Modernization of the Commission's Competitive Bidding Rules and Procedures, FCC 06-04, at paras. 29-32 (rel. Jan. 24, 2006) (increasing the limit on interim withdrawal payments and additional default payments from 3 percent to 20 percent; addresses the concern that "some bidders have been placing and then withdrawing bids late in auctions primarily to discourage potential or existing market competitors from seeking to acquire licenses").

and is already checked by the enforcement actions, revised rules and new auction procedures.

While some of the economic literature on collusion in FCC auctions is recent, the analyses rely on conduct that occurred in early auctions before the enforcement actions and rule changes by the FCC and Justice Department drastically changed the conditions.<sup>27</sup> As Professor (and former FCC economist) Timothy Salmon concluded in 2003:<sup>28</sup>

[I]n a situation involving firms that are generally collusive in nature, i.e., they tend to collude on most of their dealings, they will of course collude in any auction in which they are involved. Anything an auction designer proposes to do inside the auction to eliminate collusion will have little success. This type of intrinsic collusion among a group of bidders will also almost certainly involve the explicit structure discussed above and again must be dealt with as a standard anti-trust issue, not as an auction design issue . . . .

[I]nstances of bidders attempting to collude in FCC auctions . . . have been largely unsuccessful and to date no one has been able to identify more than a negligible loss in revenue in these auctions resulting from collusion. The reason for the lack of successful collusion is in part the FCC's attempts to minimise collusion, but these attempts have been made far more successful by the large number of competitors that are usually involved in each auction.

U.S. Cellular is unaware of any serious allegations of collusive bidding in recent large FCC auctions, such as Auction No. 58 involving 217 licenses, 35 qualified bidders, 24 winning bidders, \$2.0 billion in net bids and 91 rounds.

The FCC must carefully weigh the harms inherent in the proposed steps aimed at further reducing opportunities for collusive bidding. The proposed concealment of standard information on bids and bidders would sacrifice the legitimate needs of smaller bidders, impede

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<sup>27</sup> See, e.g., P. Bajari & J. Fox, "Complementarities and Collusion in a FCC Spectrum Auction" (NBER Working Paper #11671, 2005) (analysis of Auction 5 bids); T. Salmon, "Preventing Collusion between Firms in Auctions," in W.C.W. Janssen (ed.), Auctioning Public Assets: Analysis and Alternatives 80 (2004) ("Salmon"); P. Cramton & J. Schwartz, "Collusive Bidding: Lessons from the FCC Spectrum Auctions," 17 J. Reg. Econ. 229 (2000) (analysis of Auction 11).

<sup>28</sup> Salmon at 87, 95.

their full participation in the AWS-1 auction, and likely reduce auction revenues. These harms outweigh any marginal contribution to avoiding collusion from such concealment.

The Bureau justifies its proposed abandonment of past bid disclosure practices on the basis of two beliefs: (1) there are insignificant potential benefits from disclosing the standard information on bids and bidders during Auction No. 66 because of the characteristics of the spectrum band license valuations; and (2) Auction No. 66 is attractive for collusion because there will be a small number of bidders seeking substitutable licenses.<sup>29</sup>

Regarding the legitimate needs for information on bids and bidders in Auction No. 66, the following points strongly support full disclosures:

1. Uncertainty about technologies. For the AWS-1 spectrum band today, no infrastructure equipment or handset is available. The FCC observed that the technologies for this band are unknown and likely to be innovative.<sup>30</sup> Potential bidders, especially smaller bidders, are uncertain about when technologies will be ready for this band, the services they will support, their costs and their operating characteristics.

While the PCS/cellular bands still have several incompatible technologies, the Bureau's proposal is based on the "expectation" that "the flexible and sophisticated technologies

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<sup>29</sup> AWS Auction Procedures at 6-7.

<sup>30</sup> Service Rules for Advanced Wireless Services in the 1.7 GHz and 2.1 GHz Bands, 18 FCC Rcd 25162, at para. 1 (2003), recon., 20 FCC Rcd 14058 (2005):

Our licensing plan will allow the marketplace rather than the Commission to ultimately determine what services are offered in this spectrum and what technologies are utilized to provide these services. The licensing framework that we adopt today for the bands will ensure that their spectrum is efficiently utilized and will foster the development of new and innovative technologies and services, as well as encourage the growth and development of broadband services.

employed by successful bidders for the AWS-1 spectrum licenses will make any technical information conveyed through bidder identities of limited value . . . ."<sup>31</sup> U.S. Cellular is unaware of the basis for this expectation of flexible technologies. On the contrary, bidders' identities will provide crucial information with regard to technology risks.

In today's more concentrated CMRS industry, smaller carriers need to know the overall level of commitment larger carriers with compatible PCS/cellular technology are making to the band in order to make appropriate valuation decisions. For example, smaller CDMA carriers would be concerned if they discovered post-auction that Verizon Wireless, Sprint Nextel and ALLTEL had not bid aggressively for AWS spectrum.

Smaller bidders will be unable to drive much of the technology development for this band. Because of the uncertainties about technology development, smaller carriers will value licenses differently based on whether the auction is dominated by technologically-sophisticated, aggressive CMRS operators versus speculators, smaller bidders and new entrants, and whether the auction has many serious operators bidding versus only a few which may seek exclusivity on some infrastructure equipment and handsets.<sup>32</sup>

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<sup>31</sup> AWS Auction Procedures at 7. Compare Tenth Report at para. 106 ("competition among multiple incompatible standards has emerged as an important dimension of non-price rivalry in the U.S. mobile telecommunications market").

<sup>32</sup> See comment filed by Professors S. Brusco and G. Lopano in DA 06-238 at 2 (Feb. 6, 2006) ("in the presence of significant uncertainty about 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."); Salmon at 101 ("In cases such as this in which [technological compatibility] coordination among bidders is necessary to achieve an efficient allocation, an auctioneer should be careful that the desire to eliminate 'bad' collusion does not lead to the elimination of 'good' collusion.").

2. Uncertainty about services. As with technologies, the FCC expects the services in this spectrum to be innovative and develop in the marketplace.<sup>33</sup> Smaller bidders' valuations of licenses will depend heavily on the identities of other bidders which would reveal much about the types of services they are likely to deploy. For example, smaller PCS/cellular carriers might be unwilling to bid aggressively if the auction winners were primarily media companies with strong supplies of multimedia content, or primarily providers of high-speed data services.

3. Uncertainty about inter-carrier arrangements. Roaming and other inter-carrier arrangements are important in the PCS/cellular spectrum bands and depend heavily on the identities of the other carriers.<sup>34</sup> While the Bureau's "expectation" (more realistically, "hope") is that AWS-1 technologies will be so flexible and sophisticated as to make the identities of adjacent licensees irrelevant, it would be highly risky for smaller bidders to rely on this premise. Just as in past auctions for PCS spectrum, smaller bidders will approach Auction No. 66 with the expectation that licenses adjacent to certain other bidders (with which they have established relationships for technological compatibility, roaming, advanced service platforms, etc.) will be more valuable than licenses adjacent to different bidders. Depriving the smaller bidders of information on bidder identities will force them to make risky guesses, leading to impairment in their participation in the auction.

4. Uncertainty about providers and market structures. Observing the bids of similarly-situated bidders and other bidders they view as well-informed helps smaller bidders

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<sup>33</sup> See note 30 supra.

<sup>34</sup> Roaming arrangements are also subject to regulatory uncertainty. See Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers, 20 FCC Rcd 15047 (2005).

develop their license valuations. Additionally, smaller bidders need to know the identities of other bidders in order to discount the relevance of bids from bidders they view as uninformed or speculators. Also, smaller bidders may assign a lower value to a market in a region dominated by a few larger carriers, compared to a region with several other smaller carriers. With greater valuation uncertainty caused by concealment of bids and bidder information, bidders would likely perceive greater risks of the Winner's Curse (overpaying once the identities of other winners and their bids are disclosed), leading to reluctance to bid aggressively.

5. Uncertainty about timing. The need to relocate federal incumbents and the uncertainty overhanging the relocation of Broadband Radio Service incumbents<sup>35</sup> makes the timing and cost of deployment uncertain. This is compounded by the uncertain timing of technologies. Bidders cannot simply apply to AWS-1 their valuation models for PCS/cellular spectrum. Recognizing that larger, technologically-sophisticated bidders may have an information advantage in assessing timing issues, smaller bidders need to know the identities of bidders so that they are not misled by the bids of uninformed bidders and speculators.

These various types of uncertainties surrounding the AWS-1 spectrum are counter to the Bureau's assumption that bidders have so much information about license values from the PCS/cellular markets that they have little legitimate need for disclosure of bid and bidder information during Auction No. 66. There are deep unknowns about the AWS-1 markets, and bidders will not proceed to apply the valuation models they use for the relatively mature PCS/cellular markets. This is not merely an offering of more spectrum in these familiar markets. Like the FCC, bidders expect in the AWS-1 markets innovative technologies and services that

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<sup>35</sup> See Sprint Nextel Ex Parte Presentation in ET Docket No. 00-258 (Feb. 7, 2006).

are currently undefined and unproven. Information about bids and bidders each round will be crucial to guide bidders in this risky, large, high-stakes auction.

Four other points weigh against the Bureau's expectations on which its concealment proposal is based.

First, the Bureau notes that "the potential for such anti-competitive bidding behavior is greater when an auction offers multiple, substitutable blocks of licenses for sale and when the number of bidders is expected to be low compared to the number of licenses offered."<sup>36</sup> No doubt, 1,122 AWS-1 licenses in Auction No. 66 is a large offering. However, other factual assumptions in this statement are unsupported and probably incorrect. Only the Block A licenses are based on CMAs, and the EAs in Blocks B and C differ in bandwidth. As the FCC anticipated in its order on the band plan, it is likely that many smaller bidders will be interested in acquiring particular localized service areas and particular small, rural markets.<sup>37</sup> For these bidders, the auction does not offer multiple, substitutable blocks of licenses for sale. Moreover, there is a high degree of complementarity across adjacent licenses, including because of technological compatibility and roaming. Smaller bidders will be unlikely to trade-off their interest in some areas and licenses through collusive bidding. In fact, only Blocks D and E have the same total bandwidth and geographic area type. Yet, there are few REAG blocks and the bids on the REAGs are likely to be so large that these bidders will fear close scrutiny and detection of any collusive bidding. Additionally, the band plan was adopted with the expectation that the auction would attract a large number of bidders, making collusion unlikely.

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<sup>36</sup> AWS Auction Procedures at 6.

<sup>37</sup> AWS Service Rules at paras. 11-21.

The Bureau's proposal risks making its expectation of low bidder turnout and activity a self-fulfilling prophecy. Requiring guessing about other bids and bidders will deter some potential bidders from participating in this important opportunity, and creates incentives against aggressive bidding, such as by dropping out of the auction in the early rounds or bidding on fewer licenses. The FCC worked hard to adopt a band plan that is open to a large number of bidders. Abandoning the standard information disclosures would undermine the attractiveness of this auction and make the bidding less competitive.

Next, economic studies have shown that sellers typically gain by revealing valuation-relevant information to bidders.<sup>38</sup> Concealing information about bids and bidders will increase auction risks, especially for smaller bidders lacking the more sophisticated competitive intelligence and analytical capabilities of the larger bidders. The bidders will rationally reduce their bids in light of these greater risks. By increasing risks for all bidders, concealing this information would likely result in lower prices compared to an auction with the FCC's standard disclosures. The loss caused by concealment likely would outweigh any marginal improvement in deterring collusion.

Third, concealing information about bids and bidders lessens the chance that the auction will yield an efficient allocation of spectrum. There will be long-term harms to consumers and the nation. The FCC's expectation that the AWS market will develop innovative technologies and services depends on having diverse, competitive licensees who, under

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<sup>38</sup> See P. Milgrom & R. Weber, "A Theory of Auctions and Competitive Bidding," 50 *Econometrica* 1089 (1982) (model showing that it is always good for the auctioneer to commit to complete information revelation); P. Eso & B. Szentes, "Optimal Information Disclosure in Auctions: The Handicap Auction" (unpublished paper, Dec. 2002) ("in the revenue-maximizing mechanism, the seller will allow the buyers to learn their valuations as precisely as possible").

conditions of perfect information, value the spectrum most highly.<sup>39</sup> These market processes will suffer from an auction that deters small bidders and undermines efficient inter-carrier technology and service arrangements.

Finally, the effects of concealing bidder information by the FCC may be spotty. Some publicly-held bidders may be obligated by SEC rules to make disclosures regarding their bidding eligibility and bidding activity. Materiality rules could require smaller public companies to make disclosures that larger bidders could avoid. This would create another level-playing-field issue.

In summary, the reasons to depart from the standard information disclosures for Auction No. 66 put forth by the Bureau and some economists are faulty. Since the early FCC auctions that were affected by collusive bidding, the FCC and Justice Department have changed the conditions through rule changes and enforcement actions. There have been no serious allegations of collusive bidding in recent FCC auctions, including in Auction No. 58. The facts demonstrate that the AWS-1 spectrum auction has severe uncertainties. These risks make disclosure of standard bid and bidder information important for the full participation of small bidders, efficient allocation of spectrum and aggressive bidding. Also, Auction No. 66 will not be conducive to collusion. While there will be a large number of licenses offered, differences in geographic area and bandwidth, complementarities across licenses and the localized interests of many bidders make most licenses poor substitutes. There are likely to be a large number of bidders interested in participating, as long as the FCC does not stifle such participation through risky information concealment rules.

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<sup>39</sup> See Rogerson.

#### IV. CONCLUSION

The AWS-1 auction will be important for the nation, consumers and the wireless industry. Smaller entities can make significant contributions to the auction of this spectrum as well as to the services and technologies in the resulting marketplace. To promote the availability of AWS-1 licenses to smaller bidders, the FCC should conduct a single SMR auction with the standard disclosures about bids and bidders.

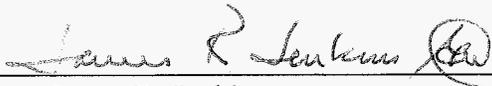
Concurrent SMR and SMR-PB auctions would introduce unnecessary complexity and anti-smaller-bidder bias. The band plan for AWS-1 already provides aggregations by geographic area (the very large REAGs and the other EA packages) and frequencies (20 MHz blocks). Even if the SMR-PB auction were limited to some blocks of the REAG licenses, the effect may be to make the other licenses less available to smaller bidders.

The proposed concealment of bidder and bid information in each round is based on several inaccurate expectations. Because of uncertainties surrounding the technologies, services, providers and valuations in this new spectrum block, disclosing this information would yield substantial benefits to bidders and the efficiency of the auction's allocation of spectrum. Bidders will not simply apply their PCS/cellular models to value this new spectrum. After some instances of collusion in the early auctions, the FCC adopted anti-collusion rules and auction procedures (fixed bid increments and default/withdrawal penalties). These steps have been effective in recent auctions, and the FCC just adopted even tougher rules against collusive bidding for the upcoming auction. With the proper auction rules, the AWS-1 auction is likely to attract a large number of diverse bidders, many focused on selected, non-substitutable licenses. All of these conditions make collusion unlikely. The harms to smaller bidders and the auction process from the proposed concealments outweigh the benefits of any marginal deterrence to collusion.

Why make changes (in a procedure which has worked well in the past, and been carefully refined over time) which will definitely create new problems (especially for regional and small competitors), when it is not even clear that the "problems" the changes are meant to address currently exist?

Respectfully submitted,

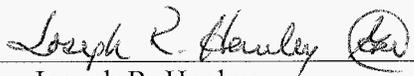
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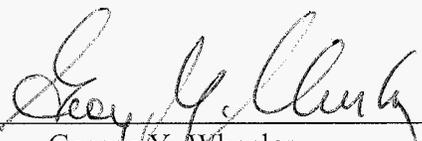
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