Before the
COPYRIGHT ROYALTY JUDGES
Washington, D.C.

In the Matter of ADJUSTMENT OF RATES AND TERMS FOR PREEXISTING SUBSCRIPTION SERVICES AND SATELLITE DIGITAL AUDIO RADIO SERVICES	)	Docket No. 2006-1 CRB DSTRA

REBUTTAL TESTIMONY OF

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Rebuttal Testimony of Michael Pelcovits

I am a Principal with Microeconomic Consulting & Research Associates, Inc. ("MiCRA"). I previously provided written direct testimony in this proceeding and my background and qualifications as an expert are included with that testimony. I provide this statement to respond to a number of points made by Dr. John Woodbury on behalf of the SDARS, as well as issues raised during cross-examination.

The foundation for Dr. Woodbury's support of the royalty rate proposed by the SDARS of 0.88% of revenue is his analysis of two proposed benchmarks. The first benchmark is the rate paid by the pre-existing subscription services ("PSS") for the sound recording performance right. The second benchmark is the payments made by XM and Sirius to ASCAP, BMI, and SESAC for the musical works rights that "underlie the public performance of a sound recording."[1] I believe that neither of these benchmarks is suitable for purposes of establishing a royalty fee for the sound recording performance rights at issue in this proceeding. I will explain my reasons for this in Section 1 (addressing the PSS benchmark), Section 2 (addressing comparisons of per play rates observed in the market and implied by the SDARS' rate proposal), and Section 3 (addressing the musical works benchmark). I will also address the substitutional impact of SDARS on the sales of recorded music (Section 4), and in Section 5 of this testimony, I provide a restatement of the surplus calculation given in my direct testimony to adjust for Mr. Butson's revised financial projections.

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[1] Woodbury Written Direct Testimony ("WDT") at 4-5.

1. Dr. Woodbury's PSS Benchmark

Dr. Woodbury proposes an extremely low royalty rate, less than one percent of revenues, for the sound recordings broadcast by the SDARS. Dr. Woodbury arrives at this extremely low rate through the interplay of two critical errors. Dr. Woodbury's first error is his assertion that music has an "inherent value" that is (or should be) the same across all channels of distribution. This is plainly incorrect. Sound recording rights, like other forms of intellectual property, are commonly sold at higher prices in circumstances in which consumers value the experience more highly. Dr. Woodbury's notion that music has an "inherent value" across distribution channels is neither empirically nor normatively proper.

Dr. Woodbury's second error is his assertion that the royalties negotiated for PSS are the best benchmark on which to base royalties for the SDARS. This too is plainly incorrect. Although Dr. Woodbury waffles on the point, at times he seems to agree that the best starting point to determine a rate under Section 801(b) is a market-based rate. But he acknowledges that the PSS rate is not a market rate. Consequently, by his own admission (at least some of the time), he is starting from the wrong place. And even if the PSS rate reflected a market-driven bargain, the SDARS and PSS offer different functionalities and are of vastly different value to consumers, making it exceedingly difficult to adjust accurately the rates found in the PSS market to derive a rate for the SDARS market. Moreover, to the extent that Dr. Woodbury tries to make virtue of necessity by claiming that the PSS rate is a good benchmark precisely because it reflects the application of the 801(b) factors and is *not* a market rate, he wholly fails to account for the differences in how the 801(b) factors applied to the PSS in 1998 compare to the application of those factors to the SDARS in 2007. For example, the 801(b) analysis that resulted in a PSS rate turned in

part on the belief that the PSS promote the sale of recorded music, while the evidence being submitted to the Court in this case clearly shows that the SDARS displace sales of recorded music. In short, the PSS rate offers no real guidance for the task at hand in this case.

I will expand on each of these points below.

A. Does Music Have an Inherent Value?

Dr. Woodbury offers neither empirical nor normative bases for his unusual assertion that music has an "inherent value" across distribution channels. This assertion is totally inconsistent with the typical treatment in the economics literature of the pricing or valuation of intellectual property of all sorts, which is routinely sold at different prices to different users based on the value to the consumer. For example, Dr. Woodbury's colleague, Professor Carl Shapiro, put the issue quite simply in discussing how firms should seek to price information (which, like sound recordings, is a form of intellectual property):

> We've seen that a key aspect of pricing information is to use value-based pricing: sell your product at different prices to different consumers, according to how much they are willing to pay for it.[2]

As Dr. Ordover pointed out in his written direct testimony, music, like other forms of intellectual property, is characterized by zero or extremely low marginal costs per listener exposure, and high fixed costs. Marginal cost pricing is not efficient, because if all users pay zero, the music will not be recorded in the first place. Prices must be above marginal cost.[3] In choosing among various ways to implement above-marginal-cost pricing, Dr. Woodbury, without offering either empirical or normative support, argues that sound recording royalties should be priced on a uniform basis across channels. This plainly

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[2] Carl Shapiro and Hal R. Varian, Information Rules, A Strategic Guide to the Network Economy, Harvard Business Press, Boston, MA (1999) p. 53. Professor Shapiro serves as a senior consultant to Charles River Associates, which is Dr. Woodbury's employer.

[3] Ordover WDT at 14-17.

contradicts Dr. Shapiro's prescription for value-based pricing for other intellectual property. Dr. Woodbury's proposal also is inconsistent with Ramsey pricing principles, which, as explained by Dr. Ordover in his direct testimony, offer a sound theoretical basis for differential pricing of services with zero or little marginal cost.[4] Value-based pricing practices, such as Ramsey pricing, can benefit society generally because output is higher than under uniform pricing. By contrast, when uniform pricing is required by law, output will be lower if the uniform price is set high enough to generate the same total revenue as a Ramsey-type price. The reason is that the uniform price will exceed the willingness to pay of the customers with lower valuations.

Dr. Woodbury's preference for uniform pricing thus runs counter to the teachings of economics. Not surprisingly, therefore, when asked to explain the basis for his preference for uniform, non-value-based pricing, Dr. Woodbury offered no recognized economic theory, saying only that "if [he] were dictator,"[5] owners of sound recording rights would receive the same price from both high-value and low-value services that use the music.

In addition to offering no normative justification for his pricing preference, Dr. Woodbury offers no empirical justification for uniform pricing. Indeed, he testified that he did not even bother to inquire whether sound recording rights are sold on a uniform basis in unregulated channels.[6] In fact, and not surprisingly, the pricing of sound recordings is value-based. As SONY BMG witness Mark Eisenberg testified, many portable interactive streaming services sell to consumers at a subscription price of about $15 per month, and

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[4] Ordover WDT at 17-20.

[5] Woodbury Deposition (May 1, 2007) at 129. When asked to expand, Dr. Woodbury stated that "I think that's what a market outcome should be -- I should have said a competitive market outcome." *Id.* If by that Dr. Woodbury meant he thinks that actual markets produce the result that music has a uniform price, he is plainly wrong, as I demonstrate in the following paragraphs. If he meant that markets *should* in some normative sense price music at a uniform rate -- whether or not they actually do -- he offers nothing whatsoever in the way of a plausible theory to justify this norm.

[6] Tr., June 13, 2007, Vol. VII at 22-24 (Woodbury testimony).

these services have agreed to pay a royalty of [ ] per play. Many non-portable interactive music services have a retail price to the consumer of $10 per month, and these services have agreed to pay a per-play rate of [ ] per play.[7] Yahoo's LAUNCHCAST Plus, a non-interactive and non-portable statutory webcasting services, is sold to consumers for a subscription price of $3.99 per month, according to its website, and this Court set a per-play rate for this service ranging from $.0011 in 2007 to $.0019 in 2010.[8] What is clear from this data is that the copyright owners do not obtain one single price reflecting the "inherent value of music." Instead, and as economic theory predicts, the record companies are able to obtain higher royalty rates from services that have higher value to consumers.

On cross examination, Dr. Woodbury attempted to retreat somewhat from his position that music has a single inherent value, conceding that it was possible (though he professed not to know) that record companies may obtain higher prices when selling to interactive music services compared to the prices received from non-interactive music services.[9] He clung, however, to his view that record companies would receive the same royalty per unit of music from portable and non-portable services.[10] It was necessary for him to offer this distinction between interactivity and portability, because one key difference between the SDARS and his PSS benchmark is that the SDARS offer music on a portable basis, and the PSS do not. If Dr. Woodbury conceded that record companies can command a premium when they license portable music services, his PSS benchmark

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[7] Tr., June 18, 2007, Vol. IX at 158-165 (Eisenberg testimony). As Mr. Eisenberg testified, the agreements with these music services generally include a three-part rate structure, which includes a per-subscriber rate and a percentage of revenue rate along with the per-play rate. Application of the per-subscriber and percentage of revenue rates, as with the per-play rate, results in a significantly higher royalty for the portable interactive services, compared to the non-portable interactive services. *Id.*

[8] Docket No. 2005-1, *Digital Performance Right in Sound Recordings & Ephemeral Recordings ("Webcasting II")*, 72 Fed. Reg. 24,087, 24,096 (May 1, 2007).

[9] Tr. June 13, 2007, Vol. VII at 17-18 (Woodbury testimony).

[10] Tr. June 13, 2007, Vol. VII at 8-9 (Woodbury testimony).

analysis would be fatally flawed, inasmuch as he made no attempt to adjust his royalty rate upwards to account for the greater value of music to a portable service. But here again, his testimony is both empirically and theoretically flawed.

Empirically, it is clear from the data discussed in the prior paragraphs that there is in fact a portability premium – the per-play royalties for interactive portable services are [ ] the level of the per-play rates for non-portable interactive services, even when it is the very same music service that offers both products to consumers.[11]

Dr. Woodbury's attempt to explain why record companies might theoretically charge more for the use of music by an interactive music service but could not charge more for the use of music by a portable music service is unsatisfactory. He contends that in the case of interactivity, the copyright holder was licensing the music *and* the choice of when to listen to it.[12] He attempts to contrast this with the case of SDARS, where he claims that the SDARS are providing the portability, not the record companies.[13] This is a distinction without a difference. In the case of interactive services, it is the service provider, not the record company, that solves the physical problem of how to make the service interactive. The record company charges a premium for the right to use its music in an interactive service, but that is a licensing issue, and not a matter of hardware or feasibility. Similarly, in the context of another high value use – SDARS – where the service provider solves the physical problem of making the service portable, there is no reason why the record companies should not be able to charge a premium to use the music in a portable service. According to Dr. Woodbury, however, the record companies can (and should be allowed to) collect higher royalties (or engage in value-based pricing) when the customer's high

[11] Tr., June 18, 2007, Vol. IX at 164-165 (Eisenberg testimony).
[12] Tr., June 13, 2007, Vol. VII at 19-20 (Woodbury testimony).
[13] Tr., June 13, 2007, Vol. VII at 18-20 (Woodbury testimony).

valuation relates to *when* he or she can listen to the music, but the record companies cannot and should not similarly be able to charge higher royalties when the consumer's high valuation is due to *where* he or she listens to the music.[14] So according to Dr. Woodbury, "music plus when" is a proper exercise of value-based pricing, but "music plus where" is not.

On this basis, Dr. Woodbury argues that the entire value of a portable music service carried by the SDARS should go to the SDARS themselves, since they create the mobility.[15] But the value of the SDARS service to consumers reflects the combination of content and mobility, and one could just as well approach the issue by asking what the value of the SDARS' service would be without content. The answer is zero, and by this logic the entire value should go to the music and none to the SDARS. Indeed, Dr. Woodbury accepts that music accounts for about $6 per month in customer's valuation of SDARS service.[16] Using Dr. Woodbury's logic, one could argue that music is entitled to a $6 per month royalty, since a mobile service without music is worth $6 less per month to consumers. But to give the entire consumer valuation for mobile music to the owners of sound recordings would be every bit as illogical as giving the entire mobility premium to the SDARS. Both parties are needed to provide the service, and one would expect them to share in the premium value consumers place on the combination of music plus mobility.[17]

The fact that Dr. Woodbury is wrong when he contends that there is a single "inherent value" of music undermines his entire PSS benchmark analysis. It is fundamental

[14] Tr., June 13, 2007, Vol. VII at 18-20 (Woodbury testimony).
[15] Tr., June 13, 2007, Vol. VII at 7 (Woodbury testimony).
[16] Tr., June 13, 2007, Vol. VII at 52 (Woodbury testimony).
[17] Recall that the Shapley approach to sharing the gains from cooperation gives each player the premium value of being the last player added to a successful coalition some of the time, and then calculates a return to each player based on the average of their incremental contribution across all coalitions. The result is that each player gets a share of the value premium. Dr. Woodbury, in contrast, asserts that the SDARS are entitled to 100% of the premium consumer valuation created by the combination of music plus mobility.

-- and Dr. Woodbury acknowledges -- that the demand for sound recordings by a music service is a "derived demand." That is, the music service's demand for sound recordings is derived from the consumers' demand for music played on that service.[18] Dr. Woodbury likewise acknowledges that consumers generally will pay more for a portable music service (like the SDARS) than they will for a non-portable music service (like the PSS).[19] Yet he fails to account for the fact that the derived demand for a portable service is greater than the derived demand for a non-portable service (as evidenced by the consumers' willingness to pay a higher price), based on his theory that the demand for the underlying music is somehow separate and distinct from the demand for portability.[20] I have shown above that, both in theory and in fact, the consumers' higher demand for portable music translates into higher royalties for the sound recording copyright owners. Because Dr. Woodbury did not make any adjustment to account for differences in consumer demand and value as between the SDARS and PSS, his benchmark analysis should be rejected.

B. PSS Sound Recording Royalties Should Not Serve as a Benchmark.

Even if Dr. Woodbury had attempted to make the adjustments necessary in order to derive a rate for his target market from his benchmark PSS rate -- and he did not -- for a variety of reasons the PSS benchmark is an inappropriate starting point for any useful analysis.

First, as Dr. Woodbury acknowledges,[21] the PSS royalty is a not a market rate. Rather, it reflects an agreement among the parties in 2003 to carry forward a 1998 rate set

[18] Tr., June 12, 2007, Vol. VI at 343-344 (Woodbury testimony).
[19] Tr., June 12, 2007, Vol. VI at 358-359 (Woodbury testimony); Tr., June 13, 2007, Vol. VII at 6-7 (Woodbury testimony).
[20] Tr., June 12, 2007, Vol. VI at 359-361 (Woodbury testimony).
[21] Tr., June 12, 2007, Vol. VI at 347 (Woodbury testimony).

by the Librarian, with a small upward adjustment. As a litigation settlement, the PSS rate reflects the parties' judgments on many issues that are not generally part of a marketplace negotiation, including the high costs of litigation relative to the small amount of commerce in the whole PSS industry, and the parties' predictions of how the Court might have applied the 801(b) factors to the PSS in 2003. In my opinion and that of Dr. Ordover, and as we explained in our respective written direct testimonies,[22] a market-based rate is the best benchmark from which to start the process of determining a rate under 801(b). Dr. Woodbury at times seems to agree. In his written direct testimony, he cited to a decision of the Librarian of Congress acknowledging the value of marketplace benchmarks, and opined that "I, like other economists, would regard rates negotiated at arms-length as a promising start to developing the rate in question."[23] In his oral testimony before this Court, he agreed that competitive price levels should be given substantial weight in determining the reasonableness of a proposed fee, that most economists would approach the task of determining a reasonable fee by considering market transactions in performance rights, and that an estimated market rate for performance rights that mimics the outcome of competition can assist the Court in advancing its objectives under Section 801(b).[24] If market-based rates are the appropriate starting point for a rate determination under Section 801(b), as I believe they are and as Dr. Woodbury has at times concurred, the PSS rate fails the test.

In other testimony, however, Dr. Woodbury argues that a market based rate is *not* a good starting point, and instead a rate that already reflects the application of the 801(b)

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[22] Ordover WDT at 21-31; Pelcovits WDT at 5.
[23] Woodbury WDT at 3.
[24] Tr., June 13, 2007, Vol. VII at 72-74 (Woodbury testimony).

factors provides a better beginning.[25] That the PSS rate reflects the 801(b) factors, however, argues against, not for, using PSS as a benchmark. There are two reasons for this. First, the first three 801(b) factors involve considerations that in most cases are addressed by markets, and therefore, as Dr. Woodbury himself once said, "a useful analytical starting point would be to suppose that Congress had simply created the performance right, and then allowed private transactions to determine what the price of those rights should be."[26] Hence, there is no reason not to look directly at evidence from market-determined rates. Second, to the extent that the 801(b) factors are *not* addressed by marketplace transactions, they are highly fact-specific and would be unlikely to apply in the same way to different businesses with different functionalities and different consumer demand characteristics at different times. For example, under Section 801(b)(1)(D), the Court must set a rate that minimizes the disruptive impact on the structure of the industries involved. There is no reason to think a rate that might disrupt the PSS industry would necessarily disrupt the SDARS industry, particularly given the very different cost structure and demand conditions which the PSS and SDARS face in their respective markets (which I describe below). Dr. Woodbury does not explain how to disentangle and separately weigh each of the 801(b) factors as they were applied by the Librarian to the PSS in 1998, and then apply this insight to the SDARS in 2007.

Second, the PSS rate is anomalous because it was originally based on the musical works rate. According to Dr. Woodbury, "[t]he original PSS rate . . . appears to have been based on the DMX/Music Choice -- ASCAP rate that was being adjudicated at the time."[27]

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[25] Tr., June 12, 2007, Vol. VI at 344 (Woodbury testimony).
[26] Tr., June 13, 2007, Vol. VII at 73 (Woodbury testimony).
[27] Woodbury WDT at 14. The fact that the PSS rate was originally derived from a market-based rate, as Dr. Woodbury here admits, further reveals the flaws in his argument. Since the original PSS rate was based on

It appears that in 2003 the parties used the 1998 Librarian decision, based on the musical works rate, as a starting point for their negotiations and simply adopted that rate with a slight increase. In effect, therefore, the starting point for Dr. Woodbury's PSS benchmark turns out to be the same as his second benchmark – the musical work rate. In 1998, the CARP and the Librarian may have had no better benchmark on which to rely,[28] but today multiple digital music markets have developed and abundant marketplace evidence demonstrates that musical works rights and sound recording rights are not valued the same in the marketplace. Indeed, this Court recently rejected the musical works rate as a benchmark in its Webcasting Determination. To adopt the PSS rate as a benchmark in this case would be to indirectly resurrect that now-discredited benchmark.

Third, there is a huge disparity between how the PSS and the SDARS are valued in the marketplace. It is logical to presume that consumers value the two services very differently. To begin with, SDARS offers mobility; PSS does not. Mobility commands a large premium in the marketplace, which in other contexts generates greater revenues for copyright holder. Moreover, the PSS were unable to successfully offer their service to consumers on a stand-alone or a la carte basis,[29] while the SDARS are rapidly growing their subscriber base. The indirect evidence, therefore, suggests a large difference in consumer value. More direct evidence of consumer value from marketplace is difficult to interpret, however, because PSS are not offered directly to consumers and instead are offered as part

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marketplace transactions, it makes no sense to use the PSS as a benchmark for the SDARS unless we know that those same marketplace transactions provide evidence relevant to the SDARS. And for the reasons I describe in Section 3 of this testimony, the musical works benchmark on which the original PSS rate was based is not a marketplace benchmark that provides any useful information about the sound recording market for SDARS.

[28] Indeed, in the Webcaster I Proceeding, the Librarian noted that the only reason the musical works rate was considered relevant was that there was no other probative benchmark, and further noted that the parties in the PSS I Proceeding had not fully developed issues related to the musical works rate in the record. 67 Fed. Reg. at 45247.

[29] Tr., June 13, 2007, Vol. VII at 53 (Woodbury testimony).

of a bundle of services by cable television companies. To the extent that the value of PSS to consumers can be inferred from the price paid by the cable companies to Music Choice, however, Music Choice receives only about [ ] per month from the cable companies.[30] In contrast, monthly per customer revenues for the SDARS exceed $10 per month (reflecting various discounts off the $12.95 list price), and Dr. Woodbury acknowledged that music accounts for approximately $6 per month in consumer value.[31] If the amount paid to Music Choice by the cable companies captures a significant share of consumer value, then the PSS rate could not serve as a benchmark without major adjustments to account for the extreme differences in consumer valuation. Dr. Woodbury makes no adjustments for this. Alternatively, it is possible that the prices paid by cable companies are artificially low due to a low royalty fee, and do not accurately reflect consumer value. But the disparity between [ ]/subscriber and $6.00/subscriber is simply too great to ignore, and if it turns out that [ ]/subscriber does not represent or approximate the value consumers place on a PSS service, then I would conclude that the PSS rate has little value as a benchmark because of the difficulties in determining and adjusting for differences in derived demand between the benchmark PSS market and the target SDARS market.

Finally, Dr. Woodbury's choice of PSS as a benchmark is odd given the existence of a far better benchmark – the SDARS payments for non-music content. XM itself notes that "We view programming and content expenses as a cost of attracting and retaining

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[30] Strong WDT at 12. This low price is hardly surprising. Two of the three PSS providers are no longer offering a residential service. Also, the lone PSS, Music Choice, must compete against XM and Sirius, which offer similar services to satellite TV at [ ]. XM and Sirius offer their services [ ] in the expectation of promotional benefits. But their free offerings surely hold down the prices at which cable companies will purchase service from a stand-alone PSS provider. In these circumstances, the Court should be extremely leery of using PSS as a benchmark.

[31] Tr., June 13, 2007, Vol VII at 52 (Woodbury testimony).

subscribers."[32] In this statement, XM correctly does not distinguish between music and non-music content. Nor do I, which is why I based my benchmark on payments for non-music content. One way to look at the difference between my recommendations and Dr. Woodbury's is that I view it appropriate that music and non-music be paid proportionately to the subscribers and listenership they bring to satellite radio. In my view, if one had an unidentified piece of programming, but one knew how many subscribers and listeners it attracted relative to other content, one need not know whether the programming is music or not to determine its appropriate payment. If the program brings in twice as many subscribers and listeners as the average program, it should be paid twice as much as the average program. Dr. Woodbury would insist on knowing whether the program was music or not. If the program was music, he would pay it only about 5% of the payment made for non-music programming generating identical consumer patronage.[33] I see no justification for this gross disparity in payment.

In short, the PSS is a benchmark based on a very different service with very different characteristics and consumer value, the rates for which originally were derived from an analysis of musical works that this Court has since soundly rejected. There are far better benchmarks to use.

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[32] XM Satellite Radio Holdings Inc Form 10-Q, August 04, 2006, p. 38.

[33] In approximate numbers I propose a royalty increasing to approximately 20% based on payments to non-music content. Dr. Woodbury proposes a royalty of less than one percent. Hence Dr. Woodbury's approach reduces to dividing payments for nonmusic programming by 20 to generate a royalty payment for sound recordings.

2. Comparison of Rates on a Per-Unit Basis

A. Comparison of Per-Play Rates

Dr. Woodbury's hypothesis that there is a single, inherent value of music which should be derived from the PSS rate can be tested by converting his proposed rate to a rate per unit of music, and comparing it to other per-unit rates set in the market or by this Court. The same process can also be used to compare the SoundExchange rate proposal to per-unit rates set in the market. These comparisons yield two conclusions. First, the royalty rates for sound recordings licensed in digital markets vary dramatically depending on how the sound recordings are used, which fatally undermines Dr. Woodbury's claim of a uniform inherent value of music. Second, the rate proposed by Dr. Woodbury, compared on a per-unit basis, is a small fraction of other royalty rates negotiated in the market or set by the Court.

For the purpose of this analysis, the most logical "unit" of music to use as the basis for comparing royalty rates is a performance or "play", *i.e.* one play of one song to a single listener. This is so because many of the license agreements between record companies and music services that I have reviewed contain a per-play rate as part of the rate structure, and this Court in the webcasting case established the rates on a per-play basis. Consequently, once the Woodbury proposed rate and the SoundExchange proposed rate are converted to per-play rates, the comparison to other rates is straightforward.

Restating the royalty fee proposals of SoundExchange and the SDARS on a per-play basis presents something of a challenge. It is my understanding that the SDARS do not collect data on the number of plays. In various marketplace agreements and in this Court's webcasting decision, a "play" is a broadcast of one song that is listened to by one listener.

Internet music services are able to capture information about how many people listen to each song. But the SDARS do not and, given existing equipment and technology, apparently cannot know how many people listen to each song that is broadcast.

Since data on the total number of plays is not available, it is necessary to translate the percentage of revenue rates proposed by the SDARS and SoundExchange into equivalent per-play rates, based on estimates of the number of plays. I have done this based on the data available to me. Generally, I have calculated the per-play rates by multiplying the number of songs broadcast per channel per hour (which I assume to be 15.5, consistent with the frequency set forth in the webcasting case regulations) times the number of hours per month that each subscriber listens to music. This calculation provides the number of plays per subscriber per month. I then divide that number into the revenue per month that would be generated by the parties' current rate proposals[34] in order to derive an effective per-play rate. The assumptions and calculations I used for this purpose appear in Appendix A to this testimony.

A critical factor in this calculation is the total time spent listening to music per month by the average SDARS subscriber. I have based my calculation on an estimate of the time spent listening to music of 14 hours and 45 minutes per week, per subscription. As I explain in Appendix A, I used survey data provided in discovery by Sirius and XM as the basis for this estimate, although use of the data requires some assumptions. I believe this is the most reasonable estimate of listening time that can be derived from record evidence.

[34] I estimate fees by multiplying the proposed percentage of revenue by the average revenue per subscriber for each year based on Mr. Butson's current projections.

In the table below, I provide a year-by-year comparison[35] of the two rate proposals to the rates now being applied in three other markets: (1) the rate established by this Court for non-interactive webcasting; (2) the negotiated market rate for interactive webcasting; and (3) the negotiated market rate for portable interactive webcasting. The statutory webcasting services have many important attributes in common with the SDARS, *e.g.* they broadcast multiple channels of music, with high audio quality, on a non-interactive basis. However, unlike the SDARS, the statutory webcasting services generally are not portable. As is evident from the chart below, the copyright owners obtain higher royalty rates from music services that offer portable or mobile music. Because of the added value of mobility, therefore, I would expect a market-based rate for SDARS to be higher than the statutory webcasting rate.

	2007	2008	2009	2010	2011	2012
Portable Interactive Per-Play Rate	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Non-Portable Interactive Per-Play Rate	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Statutory Webcasting Per-Play Rate	$.0011	$.0014	$.0018	$.0019	$.0019	$.0019
SoundExchange Per-Play Rate	$.00092	$.00120	$.00156	$.00161	$.00206	$.00265
Woodbury Per-Play Rate	$.00010	$.00011	$.00011	$.00012	$.00012	$.00012

The results from the fee comparison are striking. First, it is apparent that there is

[35] The fees proposed by the parties change over the license period. SoundExchange's proposal is to increase fees (per subscription or as a percentage of revenue) as the number of subscribers increase. Therefore, its per-performance equivalent will also increase significantly over time. The SDARS' proposal to charge the same percentage of revenue (0.88%) over the entire license period means that the per-performance equivalent will increase only to the extent the average revenue per customer increases. The fees for the digital music services, to the extent that they are set for a period of time shorter than the license period in this case, have been assumed by me to remain the same for the license period.

not one single inherent value of music, as Dr. Woodbury contends. Instead, the per-play rate paid by portable interactive services is [ ] the per play rate paid by non-portable interactive services, and the rate paid by non-portable interactive services is at least [ ] times more than the per-play rate established by this Court for non-interactive statutory webcasting services. In addition, when translated into a per-play rate, the SoundExchange rate proposal for the statutory license for SDARS is generally below the statutory rates set by this Court for non-interactive webcasting, exceeding the webcasting rate established by this Court beginning only in 2011, at which time a new webcasting rate will be in effect. By comparison, on a per-play basis the rates proposed by the SDARS are less than *one-tenth* of the statutory webcasting rate. I believe this comparison makes it very apparent that Dr. Woodbury's theory of an inherent value of music (at a level that works out to be one-hundredth of a cent per play) cannot be squared with marketplace evidence, and that the SDARS proposed rate is a full order of magnitude below anything that is found in the marketplace.

B. Calculation of a Rate per Broadcast

The Court adopted a per-play fee structure in the webcasting case and has shown an interest in such a fee structure in this case. The estimates given above for a per-play royalty fee in this case do not, however, provide a feasible alternative to a per-subscriber or percentage of revenue fee. While I agree that there are benefits to a per-play royalty fee, as I stated above, the SDARS do not collect and apparently do not currently have the ability to collect data on the number of plays. That is because the SDARS know how many songs they broadcast, but not how many people listen to each broadcast. Thus, broadcasting one song at a particular time on one channel may represent one play (if only one subscriber is listening) or may represent a million plays (if a million subscribers are listening). Presently, there is no way know.

As a practical matter, therefore, a per-play fee structure would require the use of surrogate data to estimate the number of plays. Using data on hours spent listening by the average subscriber might provide such surrogate data, permitting the type of calculation of a number of plays such as I performed in the preceding section of this testimony. The existing surveys that I have seen do not provide a precise quantification of listenership, however, and therefore implementation of a per-play fee could not begin immediately. Moreover, even if an acceptable survey were conducted prior to implementing a per-play rate structure, it would be necessary to repeat the survey at regular intervals in order to realize one of the major benefits of this rate structure, which is to allow royalty fees to track usage on an on-going, dynamic basis. Periodic surveys, however, may engender periodic disputes between the parties, as one side or the other may disagree with the survey design,

methodology, implementation and results. Thus, although there are benefits to a true per-play rate, it may simply not be feasible in this context.

One alternative to a per-play rate structure would be a per-broadcast/per-subscriber fee. A "broadcast," for these purposes, would be the single broadcast of one sound recording regardless of how many consumers listen to it. The concept would be to assess a fee on each sound recording broadcast on the SDARS on a per-subscriber basis. Because the SDARS know how many sound recordings they broadcast, and how many subscribers they have, basing a rate on the number of broadcasts times the number of subscribers would avoid the problem that the SDARS do not know how many people listen to each broadcast. Additionally, it is reasonable to assume that as the number of subscribers increases, so too does the number of "listens" or "plays" of the music broadcast by the SDARS. Consequently, multiplying a rate per broadcast times the number of subscribers might, in a very rough way, serve as a proxy for a per-play rate.

The SoundExchange rate proposal could in theory be translated into a per-broadcast/per subscriber fee, as follows. SoundExchange's proposed per subscriber fee could be divided by the number of broadcasts per subscriber to yield a per-broadcast fee per-subscriber. As an example, consider an SDARS that broadcasts sixty-nine music channels, 24 hours a day, 30 days a month. Assuming 15.5 songs per hour, this would translate into 770,040 broadcasts per subscriber, per month.[36] Assuming 12 million subscribers, for which SoundExchange has proposed a monthly per subscriber fee of $1.45, the per-broadcast fee would be $0.0000019 (*i.e.*, $1.45/subscriber ÷ 770,040). The total fee

[36] This is calculated as 15.5 songs per hour times 24 hours a day times 30 days a month times 69 channels.

would equal the per broadcast rate of $.0000019, times the number of broadcasts, times the number of subscribers.

In the table below I have attempted to transform SoundExchange's rate proposal into a per-broadcast/per-subscriber fee at each subscription tier assuming 69 music channels on the SDARS and 15.5 plays per hour, 24 hours a day. This calculation could be adjusted easily to fit a different number of channels or a different total number of broadcasts of sound recordings per channel.

Fee per-Broadcast Based on SoundExchange Rate Proposal

Number of Subs	<9m	9m to 11m	11m to 13m	13m to 15m	15m to 17m	17m to 19m	>19m
Monthly Fee Per Sub	$0.85	$1.15	$1.45	$1.80	$2.25	$2.65	$3.00
Number of music channels	69	69	69	69	69	69	69
Music Broadcasts per channel	11,160	11,160	11,160	11,160	11,160	11,160	11,160
Total broadcasts per sub	770,040	770,040	770,040	770,040	770,040	770,040	770,040
Fee per broadcast	**$0.0000011**	**$0.0000015**	**$0.0000019**	**$0.0000023**	**$0.0000029**	**$0.0000034**	**$0.0000039**

There is, however, a major drawback in using a flat per-broadcast/per subscriber fee structure. If the SDARS changed the number of channels (and thus the number of music broadcasts), the implied fee per-play would also change, unless the total amount of music listening declined in the exact same proportion as the decline in the number of broadcasts. This is easy to see, for example, in a case where an SDARS reduced the number of music channels by one-third from 69 to 46. Under a flat per-broadcast/per subscriber fee structure, the SDARS would pay a royalty fee one-third less than before. However, the time spent listening to music, and therefore the number of plays, is unlikely to also decrease by one-third.

There are two reasons for this. One, all SDARS music channels are not equally popular. For example, the most listened to music channel on Sirius has a past week listening index of [[redacted]] and the least listened to music channel has a listening index of [[redacted]].[37] XM's top rock station garnered [[redacted]] listeners in a seven day period compared to an estimated [[redacted]] listeners for its least favorite rock channel.[38] Although an SDARS would be unlikely to drop *all* stations with low listenership (because some customers attach great value to niche programming), it can be expected that the average listening on the dropped channels will be much less than on the retained channels. This would artificially reduce the effective per-play rate, that is, it would result in significantly lower royalties for sound recording copyright owners and performers, even if listening reduced slightly or not at all.

The second reason that listening likely would not decline in proportion to a decline in the number of broadcasts is that some subscribers can be expected to shift some of their music listening to the channels that continue to be broadcast. To the extent this happens, while the number of broadcasts will decline, the number of plays per broadcast will increase, and the use of a constant per-broadcast fee will effectively reduce the per-play fees paid to the sound recording copyright holders. For both of these reasons, a straight per-broadcast/per-subscriber rate will not properly reflect actual listening over the course of the rate term.

To expand slightly, consider what might happen under the per broadcast/per subscriber fee structure I have outlined above. Suppose, continuing with the example I

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[37] SX Ex. 112DR, attached to Wind Amended Testimony (Sirius Satellite Radio Listener Study, Wave 2, October 2006). Indices are for Big-80s and Classical Voices.
[38] SX Ex. 125DR, attached to Wind Amended Testimony (XM Satellite Radio Inc., *Who Are You Talking To?*, Presented to Programming Staff during the August 28, 2006 'Boot Camp) at 17.

used previously, that an SDARS broadcasts 770,040 sound recordings in a month. Suppose there are on average 10 people listening to each broadcast. That would equate to 7,700,400 plays under a per-play rate fee structure. Now suppose the SDARS eliminates one-third of its music channels, reducing the number of sound recordings broadcast per month to 512,847. And, finally, suppose that all of the people who had been listening to the channels that were cut now switch their listening time to the remaining channels. In that case, the number of broadcasts has declined by a third, and therefore the royalty payment has declined by a third, but the number of plays (*i.e.*, the number of times one person heard one song) has not changed at all.[39] My point is that if the Court wants to establish a rate structure that mirrors the per-play rate used in the webcasting case, and effectively is tied to the SDARS' use of music, a straight per broadcast/per subscriber fee will not work.

If the Court nevertheless were to consider a per-broadcast/per-subscriber fee, to address this issue at least in part, I would recommend a two-tier rate structure, whereby the per-broadcast fee would decrease in relationship to the total number of broadcasts. This structure could reduce, but not eliminate, the most significant distortion in a static proposal of this nature. The fee structure would be designed to collect the same total revenues per subscriber so long as the total number of broadcasts remained the same. However, if the number of broadcasts fell by 10%, the total royalty revenues would decline by some amount

[39] The same kind of results might occur as a result of the SDARS cutting unpopular channels. Again, suppose that an SDARS broadcasts 770,040 sound recordings in a month, and the average of 10 people listening to each broadcast is distributed unequally among broadcasts, so that the least popular one-third of the broadcasts are heard by only one person per broadcast, the most popular one-third of the broadcasts are heard by nineteen people per broadcast, and the middle tier of the broadcasts are heard by 10 people per broadcast. Again, the total number of plays is 7,700,400. If the SDARS cuts the least-popular one-third of its channels, again it has cut its royalties by one-third. But the number of plays has decreased, not by one-third, but by less than 4%. This is because out of the original 7,700,400 plays, only 256,423 occurred on the least popular one-third of the channels (770,040 broadcasts times 33.3% times one listener per broadcast). Here again, it is the case that a per-broadcast/per subscriber rate does not accurately, or even closely, track the results of the kind of per-play rate the Court adopted in the webcasting case.

less than 10%. In this way a two-tier rate would remedy some of the distortions discussed above relating to the lack of proportionality between total listening and the number of broadcasts.

I have performed an illustrative calculation for a two-tier structure, based on the survey data on music listenership for Sirius. The table attached in Appendix B lists the 69 Sirius music channels and the total amount of time spent listening to each channel in the prior week. I ranked the channels based on time spent listening to each channel in the prior week. I then divided the channels into two tiers. The first tier consists of the top 21 music channels. Each of these channels was listened to at least 1.5 percent of the total time spent listening to all music channels. The second tier consists of the bottom 48 music channels. Each of these channels is listened to by Sirius subscribers less than 1.5 percent of the total time spent listening to all music channels. Then I solve for a fee that satisfies two conditions. First, the fee for the first tier music broadcasts is three times the fee for the second tier.[40] Second, the total revenue collected by this two-tier fee will be the same as under a flat fee structure, which for 12 million subscribers was $1.45 per month per subscriber or $0.0000019 per broadcast per subscriber.

This generates a two-tier structure as follows:

Tier #1: Up to 234,360 broadcasts per subscriber per month	.00000351
Tier #2: Over 234,360 per subscriber per month	.00000117

[40] I do not suggest that a tiered approach would necessarily be structured in this fashion. As I indicated previously, these calculations were performed for illustrative purposes. There is a substantial question as to how to allocate listening among the two tiers. XM survey evidence, for example, establishes that listening on [[redacted]] of the top music channels comprises [[redacted]] of the total music listening on XM. SX Ex. 113DR, attached to Wind Amended Testimony (XM Beta Online Diary Study -- Fall 2006, dated January 2006 (sic)), at 39. An actual rate proposal would have to account for this substantial disparity in subscribers' listening habits.

The first-tier fee will be applied to the first 234,360 broadcasts per subscriber per month, which represents the total number of broadcasts on the 21 top-tier channels. The second-tier fee applies to broadcasts over 234,360 broadcasts per subscriber. If the number of broadcasts decline from the current amount (770,040 per subscriber per month), the royalty will be reduced first based on the per-broadcast fee for the second-tier, until only 234,360 broadcasts remain (at which point the first-tier price reductions would apply).

The multi-tier fee structure will do a better job than a single-tier fee at adjusting for the decreased importance and amount of listening to the less popular broadcasts. It will provide a fairer fee structure that compensates the copyright holder based on usage and also deters the SDARS from reducing music channels to bring down their royalty payments artificially even if listening to music declines very little.

Nonetheless, I do not believe that even such a two-tier per-broadcast/per-subscriber fee is the best means for setting a reasonable royalty rate in this proceeding. First, the per-broadcast/per-subscriber metric simply does not provide an accurate and dynamic measure of listening/consumption. It thus does not solve an issue that I understand to be of great concern to the Court. Second, I know of no marketplace agreements in which the per broadcast metric is used. The absence of any acceptance at all in the marketplace suggests that neither copyright owners nor copyright users favor this approach. Moreover, the untested nature of this metric means that it may be able to be abused in ways unforeseen. As noted above, absent a multi-tier approach or some protection like a significant percentage of revenue minimum, the SDARS can manipulate their programming to reduce music broadcasts and royalties without reducing listening. Without any marketplace

experience with this metric, there is a great deal of uncertainty as to how such a rate might operate.

In the end, therefore, I continue to believe that a percentage of revenue and/or a per subscriber minimum is most consistent with the way sound recordings regularly are licensed, adequately reflects the central importance of music to the SDARS' services, is administrable, and does not create the poor incentives or possibilities for manipulation in the same manner as the per broadcast metric. I believe these metrics are a superior way in which to implement the statutory license at issue here.

3. Musical Works Benchmark

Dr. Woodbury characterizes the royalty payments made to the performance rights organizations ("PROs") as a "useful benchmark for the SRPR royalty rate."[41] He reasons that "a buyer of the sound recording performance rights needs both rights in order to render a public performance of the sound recording,"[42] which puts the buyer in the "same position with regard to the two broadcast rights."[43] Likewise, he argues that the sellers of the two rights are in the same position because the "direct cost of using either right for additional performances is the same (zero)."[44] Expounding in his oral testimony, Dr. Woodbury explained that the musical works benchmark was appropriate because "it involved a similar right, similar sellers, obviously, the same purchasers, the SDARS and for a comparable service."[45] His implication is that marketplace transactions between the buyers and sellers of the two performance rights would yield similar royalties. As applied to this case, Dr. Woodbury argues that the PRO payment should serve as an upper bound for the sound recording performance right.

The Court should reject use of the musical works benchmark in this case for the same reasons it rejected this benchmark in the webcasting case. In the webcasting case, the Court found that "substantial empirical evidence shows that sound recording rights are paid multiple times the amounts paid for musical works rights."[46] The Court also rejected reliance by the Services' expert on sunk cost as a justification for using the musical works benchmark. Third, the Court found that "there is ample empirical evidence to controvert

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[41] Woodbury WDT at 36.
[42] Woodbury WDT at 37.
[43] Woodbury WDT at 37.
[44] Woodbury WDT, at 37.
[45] Tr., June 12, 2007, Vol VI at 247 (Woodbury testimony).
[46] *Webcasting II*, 72 Fed. Reg. at 24,094.

Dr. Jaffe's premise the market for sound recordings and the market for musical works are necessarily equivalent."[47]

Dr. Woodbury fails to account for or explain the abundant evidence from the marketplace that the two different rights are valued differently. As I explained in the webcasting case and as Mr. Eisenberg explains in his rebuttal testimony presented in this case,[48] this evidence is compelling. Sound recording copyright holders receive royalties several times greater than the royalties paid to musical works copyright holders. There simply is no standard "ratio" that can be used to transform a musical works rate into a sound recording rate, and certainly the two rates are not equivalent in the market.

Dr. Woodbury does not make the same sunk cost argument as Dr. Jaffe, but he does resurrect the claim that the fees received by the sound recording rights holders are small enough that they "would not have any detectable effect on the sound-recording production decisions of the labels."[49] As I explained in my rebuttal testimony in the webcasting case, the economic reasoning behind this argument is flawed. A business will not be indifferent economically about how much revenue it can earn from a service (and how much of its costs it can recover), simply because the service currently accounts for a small portion of its total sales. Rather, a rational business will consider each opportunity to increase revenues and cover a portion of its costs as worthwhile in its own right. So long as the business does not have to incur a transaction cost that offsets the benefit of charging what would otherwise be a profit-maximizing price, it will attempt to do so. With respect to the sale of sound recordings for use by the SDARS, it is nonsensical to say that it is not worth the effort involved to negotiate a price that more closely reflects conditions in the SDARS

[47] *Webcasting II*, 72 Fed. Reg. at 24,095.
[48] Eisenberg WRT at 4-8.
[49] Woodbury WDT at 37.

market and in particular the willingness to pay of the consumer. Indeed, this is especially true in light of the evidence, which I discuss below, that SDARS listening substitutes for CD sales.

On a more fundamental level, Dr. Woodbury ignores the structure of the markets that he is looking at and the relationships that define these industries. Although there are separate licenses at issue -- one for the musical work and one for the sound recording -- there is only one final product that is provided to the SDARS and to their customers: the sound recording. The structure of the market for music is one in which record companies invest in the creation, development, and marketing of sound recordings from which both record companies and music publishers benefit. Music publishers earn the vast majority of their revenues from sales or licenses of sound recordings that use musical works as an input, not on sales or licenses of musical works by themselves. Therefore, even though the music publisher holds a separate right from the sound recording copyright (for which in many cases, the user must negotiate separately), the value of this right is not arrived at independently in the market. Moreover, any attempt by the music publishers to extract an equal payment for its right will not succeed in the long run, unless the long run value of its input is as great as all other inputs combined.

In the end, Dr. Woodbury presents no arguments in favor of the musical works benchmark in this case other than those that this Court already rejected in the webcasting case. The Court should reject these arguments here as well.

4. Promotion and Substitution Effect of SDARS on Sales of Recorded Music

Dr. Woodbury believes that the issue of promotion or substitution is important to assessing the Section 801(b) factors. Indeed, his analysis of the 801(b) factors relies heavily on his claim that the SDARS have a promotional impact on the sale of CDs and downloads.[50]

Dr. Woodbury asserts that "there is no evidence to support the proposition that satellite radio listenership displaces any CD or download sales, let alone by a large enough amount to offset the substantial promotional benefits."[51] Under questioning by Judge Roberts, Dr. Woodbury expands on this point, explaining that:

> I think it's certainly possible that there are some subscribers to XM and Sirius who have reduced their CD purchases. I don't know. The question I was addressing was obviously the broader question of overall, what's the net effect on CD purchases and I think when I look at the behavior of the labels with respect to their efforts to get their music promoted on the SDARS, I conclude that that evidence is consistent with on balance, the SDARS promoting rather than displacing CD purchases.[52]

Based in part on his understanding that the SDARS promote sales of CDs and thus provide a direct economic benefit to the copyright owners, Dr. Woodbury concludes that this Court should adopt a royalty fee for sound recordings that is far lower than those observed in the marketplace.

Substantial evidence contradicts Dr. Woodbury's opinion that listeners to XM and Sirius on average will increase their purchases of recorded music. Quite to the contrary, the survey evidence produced by the SDARS, which I cited to in my oral direct testimony, as

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[50] *See* Woodbury WDT at p. 43-47 (discussing 801(b)(1)(a)); p. 48 (discussing 801(b)(1)(c)); p. 56 (recommending a rate at the lower bound of range of rates because the SDARS outperform the PSS services with respect to promotion).
[51] Woodbury WDT at 47
[52] Tr., June 12, 2007, Vol. VI at 336 (Woodbury testimony).

well as three new surveys recently produced or obtained by SoundExchange, show that listening to XM and Sirius causes a substantial reduction in CD purchases.

I have reviewed the two surveys and accompanying reports that SoundExchange has commissioned for the rebuttal phase of this case. Dr. Yoram Wind conducted a telephone survey employing a test and control group approach. The survey reports the results of 200 current satellite radio subscribers (the test group) and 101 individuals who are considering subscribing to satellite radio in the near future (the control group). The fundamental concept behind this survey approach is that because considering subscribers are likely to have the same characteristics as current subscribers, any differences between the two groups with respect to the numbers of CDs and downloads purchased can be attributed to the fact that the subscriber group listens to satellite radio, while the control group does not. The Wind survey asked respondents to recall when their two most recent CD and MP3 purchases took place, and how many CDs and MP3s they purchased on those occasions. These data then were used to calculate typical purchase frequencies and quantities. The results show that the considering subscribers purchased 2.7 more CDs and 4 more downloads per year than current subscribers. As Dr. Wind explains, because the only relevant difference between these two groups is that the test group respondents are current subscribers who listen to satellite radio, and the control group respondents have not yet subscribed and therefore do not listen to satellite radio, the significantly greater number of music purchases by the control group respondents demonstrates that satellite radio has a substitutional effect.

A second survey, designed by Dr. George Mantis, was conducted by telephone and looked at the CD and MP3 purchase patterns of 690 satellite radio listeners. The survey

asked the respondents to state the number of CDs and MP3s they purchased in an average three month period both before and after they began listening to satellite radio. To the extent that respondents indicated that their purchases increased or decreased after getting the service, respondents were asked to explain, in their own words, what they thought caused the change in purchasing behavior. Respondents who attributed the change in their buying habits to satellite radio reduced their CD purchases on average by 2.6 per year. The results showed that satellite radio was also responsible for a slight increase in MP3 purchases of 1.0 download per year. Moreover, the number of people who stated that subscription to satellite radio had caused them to decrease their purchasing of sound recordings was more than *10 times* the number of people who said that satellite radio had caused them to increase their purchases of sound recordings.

The Wind and Mantis surveys are consistent with the SDARS' own survey results, which I discussed in my prior oral testimony before this Court.[53] XM and Sirius both conducted surveys in the ordinary course of business which found that subscribers substantially reduced the time spent listening to CDs and downloads after obtaining a satellite radio subscription. In the case of Sirius, its survey evidence showed that listening to CDs and MP3s in the car declined from [[redacted]] of the subscribers' time to [[redacted]] of the subscribers' time. The results for XM, which included all listening (rather than just in-vehicle listening) were similar. Subscribers reported that CD listening accounted for [[redacted]] of their listening time prior to their XM subscription, and [[redacted]] of their listening time after. The respondents spent [[redacted]] of their time listening to MP3s before subscribing to XM, and that number dropped to [[redacted]] after subscribing to XM. Although these findings address time spent listening and do not directly assess the impact on purchases, in my opinion (and

[53] Tr., July 9, 2007, Vol. XVI at 286-88 (Pelcovits testimony).

contrary to Dr. Woodbury's opinion[54]), consumers who use less of a product or service are highly likely to buy less of that product or service.

Finally, SoundExchange has obtained data from a 2007 survey conducted by NPD for a third party, the National Association of Recording Merchants ("NARM"). As summarized by an NPD analyst, the results of the NARM survey "showed that satellite radio subscribers are 30% less likely to buy a CD simply because the music they like is readily available 24 hours a day."[55] As explained by Dr. Wind, the survey seems credible and the results support his conclusions that satellite radio has a significant substitutional impact.

Taken together, these studies provide convincing evidence that Dr. Woodbury is wrong when he asserts that the SDARS services are promotional. Instead, the empirical evidence is decidedly in the other direction: satellite radio's effect on music purchases is substantial and substitutional. More specifically, based on these surveys, I believe that it is reasonable to conclude that the net substitution effect from SDARS listenership is on average 2.6 CDs per subscriber per year.[56] The implications of this conclusion for this case are significant.

First, a substitution effect of 2.6 CDs per year would have a substantial impact on the rates copyright owners would negotiate with the SDARS in a free market. In my direct testimony, I analyzed SoundExchange's rate proposal from the standpoint of the likely outcome of marketplace negotiations among the individual record companies and the individual SDARS. I based my analysis on the view that a marketplace standard will

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[54] *See* Tr., June 13, 2007, Vol. VII at 104-106 (Woodbury testimony).
[55] *See* SX. Ex. 203RP, attached to Wind Written Rebuttal Testimony.
[56] Because the results of the Wind and Mantis surveys showed a very small net effect on downloads, I have not included downloads in this analysis.

capture at least the first three 801(b) policy goals.[57] From the standpoint of marketplace analysis, the loss of 2.6 CD sales per year is equivalent to a loss by the sound recording copyright holder of approximately $15.47 per SDARS' subscriber per year (or $1.29 per customer per month).[58] Notably, the SoundExchange rate proposal proposes a royalty fee of only $0.85 per month per subscriber, until the number of subscriptions reach 9 million.[59] If, as the surveys indicate, the average subscriber to the SDARS purchases 2.6 fewer CDs per year, then the sound recording copyright owner would lose approximately $1.29 per subscriber per month from CD sales, while receiving only $.85 per subscriber per month under the SoundExchange rate proposal, for a net loss of $0.44 per subscriber per month. As the SDARS subscriber base grows and the royalty fee increases under the SoundExchange rate proposal, this net loss becomes a modest net profit, assuming the substitution for CD sales does not increase.[60] In any event, throughout the license term the loss in CD sales will take a big bite out of the royalty payments received by the copyright owners from the SDARS.

In his oral testimony, Dr. Woodbury acknowledged that if a music service displaces or substitutes for sales of CDs, the lost CD sales represent a cost to the record company, and the record company would take that cost into account when negotiating with the music

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[57] Even if each 801(b) factor were reviewed on its own without reference to its role in a marketplace negotiation, the evidence of substitution is extremely relevant because the loss of revenue as a result of substitution relates directly to the funds available to create copyrighted works, the fair return to the copyright owners and performers, and the risks faced by the record companies.

[58] The record companies' gross margin on CD sales is $[[redacted]] per full price CD, according to the written rebuttal testimony of Mark Eisenberg. Eisenberg W.R.T. at 12. Thus, lost profits per subscriber per month are [[redacted]] per CD times [[redacted]] lost CD sales per year divided by 12 months.

[59] SoundExchange proposes a royalty equal to the greater of 8% of revenue or $0.85 per month. For purposes of the discussion in this testimony, I am using $0.85 as the effective fee.

[60] Even the highest tier of the SoundExchange rate proposal -- the greater of 23% or revenue or $3.00 per subscription – translates into a comparatively low rate after adjusting for substitution. The effective per subscription fee net of lost CD sales would be $1.76 or approximately 15% of revenue.

service by charging a higher royalty for its sound recordings.[61] Likewise, in his written rebuttal testimony, Mark Eisenberg states that in his licensing decisions on behalf of SONY BMG, he considers the costs of substitution, and negotiates for a rate that significantly exceeds the cost of any sales lost due to substitution.[62] Thus, in a free market negotiation, a record company would look at this bottom-line effect of the SDARS subscriptions and demand a greater royalty fee than would otherwise be indicated based on a stand-alone analysis of the SDARS market. It is inconceivable to me that the record companies would voluntarily accept a fee *below* their lost margins from displaced CD sales at the beginning of the rate term and only modestly above their lost margins in later years. In short, in my opinion, the substitution effect disclosed by the survey evidence would result in negotiated rates at the upper end of the ranges identified in my written direct testimony and that of Dr. Ordover.

Second, the fact that the SDARS have a significant net substitutional affect on the sales of other products by the record companies, rather than a net promotional affect as Dr. Woodbury believes, further undermines his reliance on his PSS benchmark. Dr. Woodbury asserts that the PSS rate provided a useful benchmark precisely because it is not, in his view, a market rate, and because it already reflects the application of the 801(b) factors. But that argument assumes that the 801(b) factors as they were applied to the PSS years ago would apply in precisely the same way to very different services -- the SDARS -- which have very different functionality (the SDARS are portable and the PSS are not), very different consumer demand characteristics, and very different economic prospects (the

[61] Tr., June 13, 2007, Vol VII at 47-48 (Woodbury testimony).
[62] Eisenberg W.R.T. at 12-13.

SDARS are growing rapidly while companies are leaving the PSS market), to name only a few differences.

The evidence regarding substitution exemplifies the difficulty in taking a rate that reflects 801(b) factors and applying it in a different market. The PSS were deemed to be promotional when the Librarian determined the royalty rate for PSS services in 1998.[63] The evidence in this case, on the other hand, demonstrates that the SDARS services are substitutional. How the promotion/substitution calculus affected the PSS rate in 1998, and how that rate could now be adjusted to fit the very different facts of this case with respect to promotion and substitution, is anyone's guess -- Dr. Woodbury certainly did not attempt any adjustment. Because the PSS and SDARS are very different services in a variety of ways -- their impact on the sales of recorded music not the least -- it is a mistake to assume that the fact-specific 801(b) factors would apply to both in the same way.

Third, it is worth considering the implication of the new evidence of CD substitution for the fourth 801(b) factor – "to minimize the disruptive impact on the structure of the industries involved and on generally prevailing industry practices." In my direct testimony, I discussed how the gradual increase of SoundExchange's proposed royalty fees alleviated any disruptive impact on the SDARS. However, in light of the new evidence of the substitution effect from SDARS listenership, it is necessary to consider the potential disruptive impact of a low SDARS royalty fee on the music industry. The evidence shows that so long as the royalty fee is below $1.29 per subscriber per month, the record companies are losing money with every new subscription to the SDARS. This is disruptive to the record companies' finances, especially in light of the continuing decline in overall

[63] *See* 63 Fed. Reg. 25394, 25407-08 (May 8, 1998) (noting that a "key finding" with respect to 801(b)(1)(C) was that "the digital audio services have substantial promotional value").

sales of recorded music, and their need to find new sources of revenue to fund the creation of new sound recordings.

Based on the new survey evidence, I conclude that the substitutional effect of SDARS listenership on sales of recorded music should weigh in favor of a *higher* royalty fee, all else equal.

5. Recalculation of the Surplus Analysis

In my written direct testimony, I presented an estimate of the surplus for the SDARS in 2012 – the final year of the licensing period. I based this estimate on the pro forma income statements provided to me by Mr. Butson. I then applied the Shapley-value based share of surplus allocated to music (62%) to used this surplus estimate to assess the reasonableness of the SoundExchange rate proposal for 2012.

In this testimony, I provide a new estimate of 2012 surplus, based on the updated financial estimates provided by Mr. Butson. In order to facilitate comparison to my direct testimony, I have calculated the surplus using the same methods and formulas. The results are shown in the table below.

SDARS 2012 SURPLUS CACULATION
(in thousands of dollars, except subscribers)
Updated

	XM	Sirius
Number of Subscribers	**15,407,971**	**15,459,960**
Total Revenue	**$2,556,118**	**$2,555,099**
Revenue Share (est.)	$374,851	$323,406
PRO and Other Royalties	$76,684	$76,653
Customer Care and Billings	$151,886	$157,852
Cost of Merchandise	$79,834	$55,929
Ad Sales	$48,149	$0
Subsidies and Distribution	$381,261	$343,449
Variable Costs	**$1,112,665**	**$957,290**
Advertising and Marketing	$205,304	$260,468
Retention and Support	$39,268	$0
Semi-Variable Costs	**$244,572**	**$260,468**
Satellite and Terrestrial	$57,061	$36,625
Broadcast	$25,875	$0
Operations	$42,052	$0
R&D	$28,443	$56,986
G&A	$73,158	$116,936
Fixed Costs	**$226,589**	**$210,547**
Capital Cost	**$228,820**	**$228,820**
Total Costs	**$1,812,645**	**$1,657,125**
Surplus	**$743,473**	**$897,974**
Surplus Per Customer	**$4.02**	**$4.84**

In my direct testimony (p. 30) I calculated a licensee fee based on this surplus model for 2012. In this testimony, I will recalculate the fee using the new 2012 surplus estimate. The average of this surplus for the two SDARS is $4.43 per subscriber per month (compared to $4.67 in my direct testimony). Multiplying this surplus estimate by the Shapley share – 62% -- yields a per subscriber rate of $2.75. The per subscriber rate would

be approximately $2.37 in 2007 dollars. Stated as a percentage of revenue the fee would be approximately 20%.[64]

I have also re-done the analysis of the steady state surplus for all five years of the statutory rate period (as explained on page 32 of my direct written testimony). This analysis shows that the present value of the sum of the Shapley value surplus across the entire rate period exceeds the revenues earned under the SoundExchange rate proposal.

[64] This compares to 24% of revenue provided in my direct testimony. In my amended direct testimony, I adjust this figure downward by 2% to account for the SDARS portion of the cost of producing music content and to adjust for the musical works royalty fee differently. I would apply the same adjustment to the new estimate, which would result in a recommended sound recording copyright fee of 18%.

I declare under penalty of perjury that the foregoing testimony is true and correct to the best of my knowledge and belief.

Michael D Pelcovits

[Michael D. Pelcovits]

Date: July 24 2007

APPENDIX A

Calculation of Number of Performances per Listener

In order to calculate an effective per performance rate it is necessary to estimate the average number of plays per subscription per month. I relied on the survey and diary evidence provided by the SDARS to obtain this estimate. According to the latest survey provided by Sirius (Second Quarter 2006), the average weekly time spent listening to Sirius is [[redacted]], of which [[redacted]] is spent listening to music.[65] (Previous survey results reported by Sirius show the time spent listening to music varying between [[redacted]] and [[redacted]].)

Documents provided by XM provide two other estimates. The OTX on-line diary study from the Fall of 2006 shows average weekly time spent listening of [[redacted]].[66] The Arbitron survey from Fall 2006 shows average weekly time spent listening of [[redacted]].[67] A different survey provided by XM estimates that 62.4% of the average subscriber's time spent listening to XM is for music programming.[68] Based on this estimate, average weekly time spent listening to music would be between [[redacted]] and [[redacted]], depending on which survey is used to estimate total weekly listening.

A number of assumptions and calculations must be made to convert these survey results to an estimate of the number of plays per subscription per month. The most

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[65] SX Trial Ex. 35 (Sirius Satellite, Customer Satisfaction Monitor, August 31, 2006) at 22.
[66] SX Ex. 113DR, attached to Wind Amended Testimony (XM Beta Online Diary Study – Fall 2006, dated January 2006 (sic)). Results for two prior surveys show listening of 35 hours/11 minutes and 42 hours/30 minutes.
[67] SX Ex. 114DR, attached to Wind Amended Testimony (Arbitron, XM Satellite Radio Custom Study Analysis, Fall 2006) ("Arbitron Study") at 31. Results for five early periods show weekly time spent listening ranging from approximately 22 hours to just under 25 hours.
[68] SX Ex. 123DR, attached to Wind Amended Testimony (XM Research Overview, June 13, 2006).

challenging aspects of the calculation are to account for two key factors. The first factor concerns listening by the SDARS subscribers on media for which the SDAR royalty would not apply. The second factor concerns time spent listening by other household members to the SDARS.

First, the Sirius survey includes within total hours spent listening the time spent listening on-line to Sirius' webcasting service and on Dish TV to the Sirius-supplied channels, neither of which should be included for purposes of calculating a per-play fee for the SDARS. The OTX diary also appears to include listening on-line and on DirecTV. It would appear, however, that the Arbitron survey does not include time spent listening other than on the satellite radio itself. I infer this from XM's claim to advertisers that its audience listens "for an average of 24 hours per week."[69] Since XM's on-line and DirecTV services include very few non-music channels, and its music channels are commercial free, the time spent listening on these media would not be relevant to advertisers. I would expect that XM in presenting the 24 hours per week figure to advertisers, for which it cites to the Arbitron Customer Study - Spring 2006, would only include listening and performances on the satellite radio itself.

Second, the current SoundExchange and SDARS fee proposals would be assessed on a per subscription or percentage of revenue basis (which I have converted to a per subscription fee.) Since satellite radios can be used by other members of the subscriber's household, it is necessary to include an estimate for this listening time in my computation of the effective per performance fee. And there is every reason to believe that there is a significant amount of listening by other members of the subscriber's household. The

[69] http://www.xmradio.com/sponsors/contact.xmc; downloaded July 19, 2007.

aforementioned Sirius survey estimates that there are [ ].[70] The Arbitron survey estimates [ ], which implies [ ].[71]

Since there is no data available to adjust either the Sirius survey for performances outside the SDARS royalty or to include listening time by other household members, I have set these two factors off against each other. Therefore, I have based my per-performance benchmark on the simple average of the listening to music from the Sirius survey and the Arbitron survey for XM. I believe this is a very reasonable and conservative assumption especially in light of [ ] and XM's claim to advertisers that listening totals 24 hours per week, which should correspond to listening on the SDARS radio.

I also find that an estimate of weekly listening time in the range of 24 to 26 hours is consistent with the reported results of a recent Arbitron survey that found 10 hours and 45 minutes listening per week to satellite radio by its diary keepers who listed a satellite radio channel in their diary.[72] Since this survey is not limited to the primary listener in the household and evidently does not include listening other than on the satellite radio itself, it should side-step the concerns I expressed above about some of the other surveys. The ratio of listeners per subscription for XM and Sirius averages [ ], which implies total weekly listening to satellite radio of [ ], which is slightly below the range upon which I based my estimate for time spent listening to music.

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[70] SX Trial Ex. 35 (Sirius Satellite, Customer Satisfaction Monitor, August 31, 2006) at 13.
[71] Arbitron Survey at 23.
[72] *Satellite Radio Channels Account for 3.4 Percent of All Radio Listening in Fall 2006 Arbitron Survey,* February 27, 2007, http://www.onlinepressroom.net/arbitron/.

APPENDIX B

Channel Name	Past Week Total Listening	Percentage of listening
Big '80s	317	4.29%
Classic Vinyl	293	3.97%
Classic Rewind	285	3.86%
The Pulse	260	3.52%
Sirius Hits 1	246	3.33%
Totally '70s	234	3.17%
Alt Nation	227	3.07%
Hair Nation	225	3.05%
The Vault	216	2.92%
Buzzsaw	215	2.91%
Octane	210	2.84%
New Country	166	2.25%
60s Vibrations	164	2.22%
Super Shuffle (New)	144	1.95%
First Wave	143	1.94%
The Spectrum	132	1.79%
Prime Country	130	1.76%
Radio Margaritaville	130	1.76%
Hard Attack	124	1.68%
Faction	122	1.65%
The Coffee House	118	1.60%
First Tier Stations		**55.53%**
Sirius Blues	106	1.44%
The Bridge	106	1.44%
The Roadhouse	106	1.44%
BackSpin	105	1.42%
Sirius Love	102	1.38%
Movin' Easy	101	1.37%
Rolling Stones Radio	99	1.34%
Sirius Gold	98	1.33%
Outlaw Country	97	1.31%
Shade 45	96	1.30%
Hip-Hop Nation	94	1.27%
Jazz Café	92	1.25%
Radio Disney	89	1.21%
Reggae Rhythms	85	1.15%
StarLite	85	1.15%
Left of Center	84	1.14%
Underground Garage	82	1.11%
Elvis Radio	80	1.08%
Pure Jazz	80	1.08%
Hot Jamz	78	1.06%
Jam_ON	78	1.06%
The Beat	78	1.06%
Bluegrass	73	0.99%
Area 33 (New)	71	0.96%

Channel Name	Past Week Total Listening	Percentage of listening
Standard Time	71	0.96%
Spa 73 (New)	70	0.95%
Kids Stuff	68	0.92%
The Strobe	67	0.91%
Soul Town (New)	66	0.89%
Sirius Disorder	65	0.88%
Symphony Hall	65	0.88%
Boombox	62	0.84%
RadioClassics	62	0.84%
Sirius Pops	60	0.81%
Planet Jazz	59	0.80%
Broadway's Best	56	0.76%
Chill	56	0.76%
Heart & Soul	52	0.70%
BBC Radio 1	51	0.69%
Spirit	33	0.45%
Rumbon (New)	30	0.41%
Classical Voices	28	0.38%
Revolution (New)	23	0.31%
Praise	20	0.27%
Universo Latino	20	0.27%
Iceberg Radio (New)	19	0.26%
CBC Radio 3 (New)	11	0.15%
bande a part (New)	5	0.07%
Total Listening All Channels	**7385**	