EXHIBIT 4

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INTENSITY, LLC
12730 High Bluff Drive, Suite 300
San Diego, California 92130
telephone 858.876.9101

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UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA
ALEXANDRIA DIVISION

RAI STRATEGIC HOLDINGS, INC. and R.J. REYNOLDS VAPOR COMPANY, Plaintiffs and Counterclaim Defendants, v. ALTRIA CLIENT SERVICES LLC; PHILIP MORRIS USA, INC.; and PHILIP MORRIS PRODUCTS S.A., Defendants and Counterclaim Plaintiffs.	Case No. 1:20-cv-00393 **REPORT OF RYAN SULLIVAN, Ph.D.**

Ryan Sullivan, Ph.D.

March 24, 2021

11.4. Royalty structure

(211) As discussed in Section 1.3, a reasonable royalty is designed to compensate the patent owner for the accused infringement. Thus, it is the amount of total royalties, not the royalty structure *per se*, that is relevant for an evaluation of economic damages. As described herein, reasonable royalties are calculated by "applying sound economic principles to case-specific facts."[438]

(212) In theory, a reasonable royalty could be determined using different royalty structures, yet as a practical matter, licenses often have a defined royalty structure, such as a lump-sum payment, a per-unit royalty, a percentage royalty, or some combination of these.

(213) Several factors indicate that a running royalty is the economically appropriate royalty structure in this case. A running royalty structure allows for payments to be commensurate with the actual value contribution of the technology over time as sales may grow or shrink due to marketplace factors and/or other factors. A running royalty also allows for the sharing between licensor and licensee of risks associated with overpayment or underpayment relative to the value earned in the marketplace on licensed products.[439] Furthermore, Reynolds tracks revenues and unit sales for the accused products, facilitating application of a running royalty.[440]

(214) Accordingly, it is likely that the parties at the hypothetical negotiation would have agreed to a running royalty, either as a percentage of net sales or as a per-unit royalty.

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[438] Sullivan, Ryan and John Scherling (2011), "Rational Reasonable Royalty Damages: A Return to the Roots," *Landslide* 4(2): 1–4, at 1.

[439] Razgaitis, Richard (2003), *Valuation and Pricing of Technology-Based Intellectual Property*, New Jersey: John Wiley & Sons, Inc., at 299. ("[Running royalties] provide an opportunity for the seller to receive more than the parties would have or could have expected because the outcome of the license has been greater than expected. Likewise, they can be an advantage to the buyer if the market turns out to be much smaller than expected.")

Teece, David (2002), *Managing Intellectual Capital*, New York: Oxford University Press Inc., at 153. ("The payment mechanism itself (up front lump sum versus royalties) may also impact the amount actually paid, as it may significantly impact risk sharing. An attractive feature of a licensee running with a royalty on sales is that the licensee does not have to pay unless it is successful with the licensed technology and/or intellectual property. As compared to a lump sum, the running royalty tends to delay the payment of cash and results in risk sharing between licensor and licensee.")

[440] Nicholas Gilley, Dep. Tr., 12/3/2020, at 26:23–28:22. ("Q. Okay. RJRV uses Sap for its accounting system; is that right? A. That is correct. . . Q. SAP tracks the number of units of Vuse products sold, right? A. Volumes would also be tracked in the SAP system. Q. And SAP tracks the volume of units sold on a product-by-product basis, right? A. That is correct. Q. And that's true within the Vuse portfolio of products as well? A. That is correct. Q. And the SAP system tracks revenue and costs associated with particular SKUs for products within the Vuse line, right? A. Yes.")

i. Royalty structure. The Fontem-RJRV agreement involved a lump sum payment. See Section 12.2.1. As I explain below, I convert the lump sum royalty described in the Fontem-RJRV agreement into a percentage royalty that can be applied to the period over which damages are calculated.

13.2. The '545 patent

[redacted]

[redacted]

[redacted]

605 [redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

13.3. The ’265 patent

(272) To determine a reasonable royalty for the ’265 patent, I begin with the $7,900,000 lump sum royalty the Meyer Report attributes to the ’265 patent based on the Fontem-RJRV agreement. This lump sum royalty is applicable <u>over the entire duration of the Fontem-RJRV agreement</u>, *i.e.*, until patent expiration.[609] I understand that the last to expire patent in the Air Channel family marked on VUSE products expires on January 28, 2030.[610]

(273) I translate the lump sum payment in the Fontem-RJRV agreement attributable to the Air Channel family into a percentage running royalty by dividing the $7,900,000 lump sum payment attributable to the Air Channel family by the present value of VUSE sales, evaluated as of 2018-Q4, from 2013 through 2025 of $6,902,496,088. This results in a percentage royalty rate of 0.11% for the ’265 patent. See Attachment D-7.

(274) Similar to the ’545 patent analysis, I utilize the present value of VUSE sales through 2025 (rather than through patent expiration, as described in the Fontem-RJRV agreement) because Reynolds’ profit and loss forecasts only extend through 2025. As such, sales projections over this time period are more reliable.

(275) Utilizing sales projections through expiration of the last to expire patent in the Air Channel family marked on VUSE products would result in a lower royalty rate of 0.06% for the ’265 patent. See Attachment D-7.

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609 As discussed in Section 12.2.1, the term of the license was set to last through the expiration of the last valid claim in all licensed patents.

See also: Sidak, Gregory J. (2016), “Converting Royalty Payment Structures for Patent Licenses,” *The Criterion Journal on Innovation*, 1:901–914, at 903. (Indicating that the licensing parties “typically calculate a lump-sum payment in advance by using the licensee’s projected sales revenue or unit shipments for the duration of the license.”)

610 See Attachment D-1.

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