IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

CYWEE GROUP LTD.,	§	
	§	
Plaintiff	§	
	§	
v.	§	NO. 2:17-CV-00140-RWS-RSP
	§	
SAMSUNG ELECTRONICS CO. LTD.	§	
AND SAMSUNG ELECTRONICS	§	
AMERICA, INC.,	§	
	§	
Defendants.	§	

DEFENDANTS' SUR-REPLY CLAIM CONSTRUCTION BRIEF

CyWee's reply brief fails on numerous levels. The asserted claims require comparing angular velocities with "axial accelerations." It is undisputed that the term "axial accelerations" can include linear, centrifugal, and gravitational accelerations. CyWee cannot explain which axial acceleration is compared, a distinction that affects the scope of the claims. Even if the patents-in-suit provided such guidance, it is undisputed that an accelerometer cannot distinguish between the three accelerations, making the comparison practically impossible. And a meaningful comparison between an object's angular velocities and axial accelerations is mathematically impossible.

CyWee's relies on its expert to state that the patents cover an Extended Kalman filter—a term not found in the patents or CyWee's proposed constructions. The relevant inquiry, however, is whether the claims, read in light of the specification and the prosecution history, fail to inform "with reasonable certainty, those skilled in the art [i.e., a 'POSA'] about the scope of the invention." *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124 (2014). The patents-in-suit do not disclose the type of axial acceleration used and CyWee's expert cannot as a matter of law provide what the intrinsic evidence lacks: reasonable certainty about the scope of the patent claims.

I.   "Utilizing a comparison to compare the first signal set with the second signal set" ('438 Patent, Claim 1)

CyWee incorrectly argues that the patents are definite because its expert, Dr. LaViola, has concluded that they disclose an Extended Kalman filter ("EKF"). Reply Br. at 1–2. This argument is unsupportable. Neither the patent claims nor their specifications recite the term "Kalman filter" or "Extended Kalman filter." Instead, Dr. LaViola concludes Equations 5–11 disclose an Extended Kalman filter and that a POSA would have known this filter implements the comparison. However, these equations are filled with undisclosed functions and variables. Mercer Decl. ISO Resp. Br. ¶ 119–29. Even Dr. LaViola could not identify what the equations disclosed, testifying both that Equation 11 is the "actual equation that will do the comparison" (Brann Decl. ISO Resp. Br., Ex. 4 at 61:20–22) and that "it's slightly unclear what Equation 11 is doing." *Id.* at 129:15–17. Further,

none of the equations (including Equation 11) recite or use the variables for axial accelerations (Ax, Ay, Az) or predicted axial accelerations (Ax', Ay', Az'). Indeed, it is telling that CyWee's proposed construction does not incorporate the term "Extended Kalman filter" or Equations 5–11.

Even assuming that Dr. LaViola is correct, his testimony would not affect whether a POSA could determine the meaning of "utilizing a comparison . . ." with reasonable certainty. This case is similar to *Teva Pharmaceuticals USA, Inc. v. Sandoz, Inc.*, 789 F.3d 1335 (Fed. Cir. 2015). There, the asserted claim recited a copolymer having a specific "molecular weight." *Id.* at 1341. The parties agreed that the term "molecular weight" had multiple meanings with different methods of calculation, but neither the claims nor specification provided guidance on which measure of "molecular weight" was covered. *Id.* The patentee's expert testified a POSA would have known to obtain the "molecular weight" in a certain way. *Id.* at 1341–42. The Federal Circuit found that even accepting the expert's findings, these statements could not resolve the ambiguity in the intrinsic evidence regarding which "molecular weight" to use. *Id.* at 1344–45. Here, the parties agree that the term "axial accelerations" can include multiple types of acceleration. It is also undisputed that the specification does not clarify which "axial acceleration" is being compared with an "angular velocity." Even assuming Dr. LaViola is correct that such a comparison could be done using an Extended Kalman filter, this testimony (as in *Teva*) would not outweigh the fundamental ambiguity in the patents as to which "axial acceleration" is being compared with an "angular velocity."

Dr. LaViola's testimony is also technically incorrect. As set forth in Samsung's Responsive Brief, linear, centrifugal and gravitational accelerations are inseparably combined together when read by an accelerometer—a technical limitation that is undisputed. *See* Resp. Br. at 6–7. Although an Extended Kalman filter deals with system and measurement noise, it is not designed to separate accelerometer readings into their component parts (i.e., linear, centrifugal, and gravitational acceleration). Resp. Br. at 9–10. Neither CyWee nor its expert explain ***how*** the filter would do so.

Notably, Dr. LaViola draws his conclusions not from the patents, but from Mercer Deposition Exhibit 7, a Wikipedia article, and Mercer Deposition Exhibit 8, an article cited in Exhibit 7, both of which were not included in the Joint Claim Construction Statement. LaViola Suppl. Decl. ¶ 9. Even if these articles had properly been disclosed, nothing in these articles resolves the ambiguity in the patents as to which "axial acceleration" is being compared with "angular velocities" or explains how this comparison is possible. Indeed, in making this argument, CyWee asks the Court to ignore its arguments in the *CyWee v. Apple* litigation. There, CyWee argued both that the patents do not cover Kalman filters (Brann Decl., Ex. 5 at 20–22) and "essentially" cover an "enhanced Kalman filter" (Reply Br., Ex. B), which contradicts its position here that the patents just cover "elements of an Extended Kalman filter" (Reply Br. at 1) or filters "such as" an Extended Kalman filter (Supp. Brann Decl., Ex. 12). These contradictory positions demonstrate that CyWee's own experts disagree about the meaning of the term, discounting the value of their testimony regarding whether a POSITA would be informed of the scope of the patent claims with reasonable certainty.

CyWee also argues that the patents themselves identify the problem of "unwanted accelerations" and discuss handling "errors." The key point, however, is that the '438 Patent does not solve this problem, and thus its disclosure cannot resolve the ambiguity in its claims. None of CyWee's cited cases support its position. In *Accordant Energy, LLC v. Vexor Technolgy, Inc.*, No. 1:17 CV 411, 2017 U.S. Dist. LEXIS 192603 (N.D. Ohio Nov. 21, 2017), a term with multiple definitions did not automatically render the claim indefinite instead, the critical question was whether the claim failed to inform those skilled in the art about the scope of the invention with reasonable certainty. *Id.* at *22. Here, the multiple interpretations of "axial accelerations" do so fail to inform a POSA. In *Veracode, Inc. v. Appthority, Inc.,* 137 F. Supp. 3d 17 (D. Mass. 2015), the court found only that the term "program errors" was not indefinite when there was substantial evidence that the term did not include certain types of error. *Id.* at 57. The same is not true here given the lack of evidence about

the type of axial accelerations used. In *Thomas Swan & Co. v. Finisar Corp.*, No. 2:13-cv-00178-JRG, 2014 U.S. Dist. LEXIS 86209 (E.D. Tex. June 25, 2014), the Court found that specifying different types of "holograms" in the dependent claims did not render the term "hologram" in an independent claim indefinite. *Id.* at *30. Here, the type of axial accelerations used is not stated anywhere, including in the asserted dependent claims. Contrary to CyWee's arguments that the Court's case law is "readily distinguishable" (Reply Br. at 3), the Court has found claim terms indefinite under almost identical circumstances. Resp. Br. at 6–8. In *Innovative Display Technologies LLC v. Hyundai Motor Co.*, No. 2:14-CV-201-JRG, 2015 U.S. Dist. LEXIS 57810 (E.D. Tex. May 4, 2015), the Court held that the term "more in the width direction" was indefinite because its multiple, equally plausible interpretations changed the scope of the claim. *Id.* at *71–74. Further, in *Invensys Systems, Inc. v. Emerson Electric Co.*, No. 6:12-cv-799, 2014 U.S. Dist. LEXIS 108401 (E.D. Tex. Aug. 6, 2014) (a case CyWee does not address), the Court found a claim term was indefinite where it required a mathematically impossible calculation. *Id.* at *18–20.

CyWee devotes the remainder of its reply to arguments that are legally irrelevant. CyWee incredibly attacks Samsung expert Dr. Ray Mercer's qualifications. Reply Br. at 1–2. Dr. Mercer is a Professor Emeritus of Electrical Engineering and Computer Engineering at Texas A&M University with forty-seven years of industry and academic experience, including experience with data collection using orientation sensors and filtering and estimation techniques. Mercer Decl. ¶¶ 7–9. His credentials far exceed CyWee's definition of a POSA—a person with "at least a Bachelor's Degree in Computer Science, Electrical Engineering, Mechanical Engineering, or Physics or equivalent work experience, along with knowledge of sensors (such as accelerometers, gyroscopes, and magnetometers), and mobile computing technologies." LaViola Feb. 23, 2018 Decl. ¶ 11. And CyWee's own expert has never obtained a patent on a Kalman filter. *See* Ex. A to LaViola Feb. 23, 2018 Decl.. CyWee also argues that Samsung conceded its understanding of "axial accelerations" in

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