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

INVENSYS SYSTEMS, INC.,	§	
	§	
Plaintiff,	§	
	§	
v.	§	
	§	
EMERSON ELECTRIC CO. and MICRO MOTION INC., USA,	§	
	§	
Defendants,	§	
	§	
and	§	**Case No. 6:12-cv-799**
	§	
MICRO MOTION INC., USA,	§	
	§	
Counterclaim-Plaintiff,	§	
	§	
v.	§	
	§	
INVENSYS SYSTEMS, INC.,	§	
	§	
Counterclaim-Defendant.	§	
	§	

MEMORANDUM OPINION AND ORDER

This Memorandum Opinion construes the disputed claim terms in U.S. Patent Nos. 5,555,190 ("the '190 Patent") and 6,505,131 ("the '131 Patent"), asserted in this suit by Micro Motion Inc., USA ("Micro Motion"). Also before the Court is Invensys's Motion for Summary Judgment of Indefiniteness (Docket No. 143).

On May 1, 2014, the parties presented arguments on the disputed claim terms at a *Markman* hearing and also presented oral arguments on the motion for summary judgment. For the reasons stated herein, the Court **ADOPTS** the constructions set forth below, **GRANTS**

Invensys's Motion for Summary Judgment as to the '131 Patent and **DENIES** Invensys' Motion for Summary Judgment as to the '190 Patent.

BACKGROUND

Plaintiff Invensys brought this suit alleging infringement of seven patents by Micro Motion and Emerson. Micro Motion brought counterclaims accusing Invensys of infringing the two patents at issue here. All nine patents are generally related to Coriolis flowmeters—devices that measure the properties (including mass, volume, density, and temperature) of fluids flowing through a conduit. Invensys's asserted patents are construed in a contemporaneously issued Memorandum Opinion and Order.

APPLICABLE LAW

Claim Construction

"It is a 'bedrock principle' of patent law that 'the claims of a patent define the invention to which the patentee is entitled the right to exclude.'" *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). The Court examines a patent's intrinsic evidence to define the patented invention's scope. *Id.* at 1313–1314; *Bell Atl. Network Servs., Inc. v. Covad Commc'ns Group, Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001). Intrinsic evidence includes the claims, the rest of the specification and the prosecution history. *Phillips*, 415 F.3d at 1312–13; *Bell Atl. Network Servs.*, 262 F.3d at 1267. The Court gives claim terms their ordinary and customary meaning as understood by one of ordinary skill in the art at the time of the invention. *Phillips*, 415 F.3d at 1312–13; *Alloc, Inc. v. Int'l Trade Comm'n*, 342 F.3d 1361, 1368 (Fed. Cir. 2003).

Claim language guides the Court's construction of claim terms. *Phillips*, 415 F.3d at 1314. "[T]he context in which a term is used in the asserted claim can be highly instructive." *Id.* Other claims, asserted and unasserted, can provide additional instruction because "terms are normally used consistently throughout the patent." *Id.* Differences among claims, such as additional limitations in dependent claims, can provide further guidance. *Id.*

"[C]laims 'must be read in view of the specification, of which they are a part.'" *Id.* (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995)). "[T]he specification 'is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.'" *Id.* (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)); *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002). In the specification, a patentee may define his own terms, give a claim term a different meaning that it would otherwise possess, or disclaim or disavow some claim scope. *Phillips*, 415 F.3d at 1316. Although the Court generally presumes terms possess their ordinary meaning, this presumption can be overcome by statements of clear disclaimer. *See SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1343-44 (Fed. Cir. 2001). This presumption does not arise when the patentee acts as his own lexicographer. *See Irdeto Access, Inc. v. EchoStar Satellite Corp.*, 383 F.3d 1295, 1301 (Fed. Cir. 2004).

The specification may also resolve ambiguous claim terms "where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone." *Teleflex, Inc.*, 299 F.3d at 1325. For example, "[a] claim interpretation that excludes a preferred embodiment from the scope of the claim 'is rarely, if ever, correct.'" *Globetrotter Software, Inc. v. Elam Computer Group Inc.*, 362

F.3d 1367, 1381 (Fed. Cir. 2004) (quoting *Vitronics Corp.*, 90 F.3d at 1583). But, "[a]lthough the specification may aid the court in interpreting the meaning of disputed language in the claims, particular embodiments and examples appearing in the specification will not generally be read into the claims." *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571 (Fed. Cir. 1988); *see also Phillips*, 415 F.3d at 1323.

The prosecution history is another tool to supply the proper context for claim construction because a patentee may define a term during prosecution of the patent. *Home Diagnostics Inc. v. LifeScan, Inc.*, 381 F.3d 1352, 1356 (Fed. Cir. 2004) ("As in the case of the specification, a patent applicant may define a term in prosecuting a patent"). The well-established doctrine of prosecution disclaimer "preclud[es] patentees from recapturing through claim interpretation specific meanings disclaimed during prosecution." *Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1323 (Fed. Cir. 2003). The prosecution history must show that the patentee clearly and unambiguously disclaimed or disavowed the proposed interpretation during prosecution to obtain claim allowance. *Middleton, Inc. v. 3M Co.*, 311 F.3d 1384, 1388 (Fed. Cir. 2002); *see also Springs Window Fashions LP v. Novo Indus., L.P.*, 323 F.3d 989, 994 (Fed. Cir. 2003) ("The disclaimer . . . must be effected with 'reasonable clarity and deliberateness.'") (citations omitted)). "Indeed, by distinguishing the claimed invention over the prior art, an applicant is indicating what the claims do not cover." *Spectrum Int'l, Inc. v. Sterilite Corp.*, 164 F.3d 1372, 1378–79 (Fed. Cir. 1988) (quotation omitted). "As a basic principle of claim interpretation, prosecution disclaimer promotes the public notice function of the intrinsic evidence and protects the public's reliance on definitive statements made during prosecution." *Omega Eng'g, Inc.*, 334 F.3d at 1324.

Although "less significant than the intrinsic record in determining the legally operative meaning of claim language," the Court may rely on extrinsic evidence to "shed useful light on the relevant art." *Phillips*, 415 F.3d at 1317 (quotation omitted). Technical dictionaries and treatises may help the Court understand the underlying technology and the manner in which one skilled in the art might use claim terms, but such sources may also provide overly broad definitions or may not be indicative of how terms are used in the patent. *Id.* at 1318. Similarly, expert testimony may aid the Court in determining the particular meaning of a term in the pertinent field, but "conclusory, unsupported assertions by experts as to the definition of a claim term are not useful." *Id.* Generally, extrinsic evidence is "less reliable than the patent and its prosecution history in determining how to read claim terms." *Id.*

The patent in suit may contain means-plus-function limitations that require construction. Where a claim limitation is expressed in means-plus-function language and does not recite definite structure in support of its function, the limitation is subject to 35 U.S.C. § 112 ¶ 6. *Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1424 (Fed. Cir. 1997). In relevant part, § 112 mandates that "such a claim limitation be construed to cover the corresponding structure . . . described in the specification and equivalents thereof." *Id.* (citing 35 U.S.C. § 112 ¶ 6.). Accordingly, when faced with means-plus-function limitations, courts "must turn to the written description of the patent to find the structure that corresponds to the means recited in the [limitations]." *Id*.

Construing a means-plus-function limitation involves two inquiries. The first step requires "a determination of the function of the means-plus-function limitation." *Medtronic, Inc. v. Advanced Cardiovascular Sys., Inc.*, 248 F.3d 1303, 1311 (Fed. Cir. 2001). Once a court has determined the limitation's function, "the next step is to determine the corresponding structure

disclosed in the specification and equivalents thereof." *Medtronic*, 248 F.3d at 1311. A structure is corresponding "only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim." *Id*. Moreover, the focus of the corresponding structure inquiry is not merely whether a structure is capable of performing the recited function, but rather whether the corresponding structure is "clearly linked or associated with the [recited] function." *Id*.

Summary Judgment

"Summary judgment is appropriate in a patent case, as in other cases, when there is no genuine issue as to any material fact and the moving party is entitled to judgment as a matter of law." *Nike, Inc. v. Wolverine World Wide, Inc.*, 43 F.3d 644, 646 (Fed. Cir. 1994); FED. R. CIV. P. 56(c). The moving party bears the initial burden of "informing the district court of the basis for its motion" and identifying the matter that "it believes demonstrate[s] the absence of a genuine issue of material fact." *Celotex Corp. v. Catrett*, 477 U.S. 317, 323 (1986). If the moving party meets this burden, the nonmoving party must then set forth "specific facts showing that there is a genuine issue for trial." FED. R. CIV. P. 56(c); *see also T.W. Elec. Serv., Inc. v. Pac. Elec. Contractors Ass'n*, 809 F.2d 626, 630 (9th Cir. 1987).

A party seeking to invalidate a patent must overcome a presumption that the patent is valid. *See* 35 U.S.C. § 282; *Microsoft Corp. v. i4i Ltd. P'ship*, 131 S. Ct. 2238, 2243 (2011); *U.S. Gypsum Co. v. Nat'l Gypsum Co.*, 74 F.3d 1209, 1212 (Fed. Cir. 1996). This presumption places the burden on the challenging party to prove the patent is invalid by clear and convincing evidence. *Microsoft*, 131 S. Ct. at 2243; *U.S. Gypsum Co.*, 74 F.3d at 1212. Close questions of indefiniteness "are properly resolved in favor of the patentee." *Datamize, LLC v. Plumtree*

Software, Inc., 417 F.3d 1342, 1348 (Fed. Cir. 2005); *Exxon Research & Eng'g Co. v. United States*, 265 F.3d 1371, 1380 (Fed. Cir. 2001).

Claims must particularly point out and distinctly claim the invention. "The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." 35 U.S.C. § 112 ¶ 2. The primary purpose of the requirement of definiteness is to provide notice to those skilled in the art of what will constitute infringement. *See United Carbon Co. v. Binney & Smith Co.*, 317 U.S. 228, 236 (1942). The definiteness standard is one of reasonableness under the circumstances, requiring that, in light of the teachings of the prior art and the invention at issue, the claims apprise those skilled in the art of the scope of the invention with a reasonable degree of precision and particularity. *See Shatterproof Glass Corp. v. Libbey-Owens Ford Co.*, 758 F.2d 613, 624 (Fed. Cir. 1985). To rule "on a claim of patent indefiniteness, a court must determine whether one skilled in the art would understand what is claimed when the claim is read in light of the specification." *Bancorp. Servs., L.L.C. v. Hartford Life Ins. Co.*, 359 F.3d 1367, 1372 (Fed. Cir. 2004). "A determination of indefiniteness is a legal conclusion that is drawn from the court's performance of its duty as the construer of patent claims, [and] therefore, like claim construction, is a question of law." *Atmel Corp. v. Info. Storage Devices, Inc.*, 198 F.3d 1374, 1378 (Fed. Cir. 1999).

ANALYSIS

I. Claim Construction

A. Agreed Terms

The parties have agreed to the construction of some terms. Docket No. 156.

Claim Term	Agreed Claim Construction
"notch adaptation means, cooperative with said digital notch filtration means, for altering filter parameters of said digital notch filtration means"	This is a means-plus-function element under 35 U.S.C. § 112, ¶ 6. Function: altering filter parameters of said digital notch filtration means. Structure: element 1806 of Fig. 18, which is operable to update the parameters of the notch filters
"decimating said samples"	"converting from a first number of samples to a lesser number of samples"
"calculating a normalized frequency"	"calculating a frequency normalized by desired sample rate"
"calculating [a] dot product"	"calculating a single number from two equal-length sequences of numbers by multiplying the corresponding components in each sequence and adding together the results"

In view of the parties' agreements on the proper construction of these terms, the Court **ADOPTS** the parties' constructions.

B. Disputed Terms

1. Non-Means-Plus-Function Terms

"enhanced value[s]"

Micro Motion's Proposed Construction	Invensys's Proposed Construction
Plain and ordinary meaning	"values with virtually all noise signals eliminated"

Concerning this term, the parties dispute the degree to which noise signals must be eliminated from "enhanced values." Micro Motion argues that because the language here is clear, no construction is necessary. Docket No. 124 at 16. According to Micro Motion, "enhanced" should take on its ordinary meaning: that the signal has been improved or refined, with no indication of degree required. *Id.* Micro Motion further contends that Invensys's proposal improperly narrows the claim by requiring virtually all noise signals eliminated, a

position Micro Motion asserts is not supported by the claims or the specification. *Id.* at 16–17. Invensys responds that Micro Motion's proposal would allow the limitation of "enhanced value" to be met with any improvement, no matter how slight, and thus improperly broadens the claim. Docket No. 138 at 11. Invensys further argues that the specification requires a very significant reduction in noise signals, citing several portions of the '190 Patent specification. *Id.* at 11–12.

The claims and specification make clear that a significant amount of signal noise must be eliminated to produce "enhanced values." '190 Patent at 5:3–4, 5:58–59, 10:57–58, 19:28–29. Accordingly, allowing the inference that any improvement or noise reduction, however slight, results in "enhanced values" would be incorrect. However, a construction including the words "virtually all" similarly has the potential to cause jury confusion, since it may require too high a degree of noise reduction. Accordingly, the Court construes "enhanced values" as "improved values with significantly reduced noise."

"calculating dot products of said normalized pulsation and said signals from said first pick-off sensor and said second pick-off sensor to translate said signals to said center frequency"

Micro Motion's Proposed Construction	Invensys's Proposed Construction
"Calculating dot products of a sequence of data representing the normalized pulsation and sequences of data representing said signals from said first pick off sensor and said second pick off sensor to shift the frequency content of the signals."	Indefinite as insolubly ambiguous.

Here, the parties' dispute is whether this term is indefinite, which hinges upon whether the calculation required in this limitation—calculating the dot product of the normalized pulsation and signals—is mathematically possible.

Invensys argues that the '131 Patent expressly requires that the normalized pulsation is a single number, not a sequence of numbers. Docket No. 143 at 7 (quoting '131 Patent at 9:6–12). By definition, Invensys asserts, calculating a dot product requires a sequence of numbers, not a

single number. *Id.* Invensys contends that Micro Motion even recognizes this problem and attempts to correct it by rewriting the claim in its proposed construction—replacing "normalized pulsation" with "a sequence of data representing the normalized pulsation" *Id.* Invensys further explains that while there is another example in the '131 Patent specification which correctly describes calculating the dot product of the "twiddle factor"—which is a sequence of numbers—and the actual received signal—another sequence of numbers, that is not the calculation explicitly required in claims 1, 13, and 26. *Id.* (citing '131 Patent at 9:15–18, 9:26–30).

Micro Motion argues that the phrase "calculating dot products" is not indefinite and that one skilled in the art would understand what is required of the '131 Patent claims. Micro Motion contends that the patent provides all the necessary information for a skilled artisan to understand that these claims require calculating the dot product of the sequences of numbers represented by W_k and $X_ß(k)$, where $X_ß(k)$ represents a digital sequence of a sensor input signal and W_k is a sequence of the demodulation signal. Docket No. 151 at 7–8. Micro Motion also explains, based on the specification, that W_k is the "real valued 'twiddle' factor." *Id.* Micro Motion asserts that because one skilled in the art would understand how to implement demodulation in the context of calculating a dot product based on the specification, the claims are not indefinite. *Id.* at 8.

It is not the province of the courts to rewrite claims to preserve their validity. *Allen Eng'g Corp. v. Bartell Indus., Inc.*, 299 F.3d 1336, 1349 (Fed. Cir. 2002). It appears that is what Micro Motion is asking the Court to do here. The plain language of all three independent claims of the '131 Patent require "calculating dot products of said normalized pulsation and said signals from said first pick-off sensor and said second pick-off sensor to translate said signals to said center frequency." It is undisputed that the normalized pulsation is represented by a single

number, defined by the equation: $\omega_d=2\pi(x*F_d)/F_s$, where x is the decimation factor, F_d is the estimated frequency, and F_s is the frequency of the samples. '131 Patent at 9:4–14. It is also undisputed that calculating a dot product requires a sequence of numbers. Docket No. 143 at 7; Docket No. 151 at 7. Accordingly, as Invensys argues, calculating a dot product where one of the inputs is a single number is mathematically impossible.

Micro Motion attempts to correct this problem by replacing "normalized pulsation," a single number, in the claim terms with "twiddle factor," which can be represented by a sequence of numbers. Docket No. 151 at 7–8 (explaining that the dot product is calculated using W_k and $X_ß(k)$). This argument fails. The '131 Patent specification clearly defines both "normalized pulsation" and "twiddle factor." '131 Patent at 9:6–25. These are two distinct terms based on two distinct equations. Micro Motion argues that a skilled artisan would understand to calculate the dot product of the twiddle factor and signal sequence based on the specification, but cites no evidence from the claims, specification, or prosecution history that support the argument that "normalized pulsation" and "twiddle factor" can be or are used interchangeably. In effect, Micro Motion suggests that a skilled artisan would understand the error of the claims and discern the intent of the inventor by ignoring the literal language of the claims. This is not a situation where, as in *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2131 (2014), there is a term potentially open to multiple interpretations. Here, the patentee chose to use the term "normalized pulsation" in the claims and expressly defined that term in the specification. The Court is not permitted to rewrite unambiguous patent claims simply because the process claimed cannot be performed as the patentee intended. *Chef America, Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371, 1375 (Fed. Cir. 2004).

Because the plain language of all three independent claims of the ’131 Patent require performing a calculation that is mathematically impossible, the claims are indefinite and render the ’131 Patent invalid.

“decimating said samples”

“calculating a normalized frequency”

“calculating a normalized pulsation”

“demodulating … to a center frequency”

“center frequency”

“calculating [a] dot product”

These terms appear only in claims 1, 13, and 26 of the ’131 Patent, which are invalid for indefiniteness. Accordingly, construction of these terms is moot and the Court need not address them.

2. Means-Plus-Function Terms

The parties agree that each of the following terms is a means-plus-function term. The parties further agree on the function for each term. The only disagreement on the terms is the appropriate structure.

“digital notch filtration means, responsive to the generation of said sequence of discrete sampled values, for generating a sequence of discrete enhanced values”

Micro Motion’s Proposed Construction	Invensys’s Proposed Construction
Means-plus-function Function: generating a sequence of discrete enhanced values. Corresponding structure: adaptive notch filter	Means-plus-function Function: generating a sequence of discrete enhanced values. Corresponding structure: Adaptive Notch Filters 204, 1300, and 1310; 4:63-6:47; 22:12-24:23; 39:45-41:62.

Micro Motion contends that Invensys's proposed construction is too narrow, improperly limiting the claim to a single embodiment. Docket No. 124 at 22–23. Further, Micro Motion argues that its proposed structure accurately reflects the requirements of the specification which explicitly defines "adaptive notch filter" as "a filter with variable parameters." *Id.* at 22 (quoting '190 patent at 6:34–35). Invensys counters that Micro Motion's broad proposed structure is not linked to the agreed function here, as required when defining structure for means-plus-function terms. Docket No. 138 at 13. Invensys supports its proposal by citing the only two embodiments of "adaptive notch filters" linked to the function of "generating a sequence of discrete enhanced values." *Id.* at 14.

In exchange for the convenience of employing means-plus-function limitations under § 112, ¶ 6, the structure disclosed in the specification must be clearly linked or associated to the function recited in the claim. *B. Braun Medical, Inc. v. Abbott Labs.*, 124 F.3d 1419, 1424 (Fed. Cir. 1997). Micro Motion provides no evidence to link its proposed structure to the agreed function. Instead, Micro Motion proposes that the corresponding structure may be a generic form of the actual disclosure. Accordingly, as Invensys argues and is required by claim construction law, the embodiments provide the actual corresponding structure, not merely examples of that structure. In one embodiment, "[a]daptive notch filter 204 . . . enhances the signal values" thus performing the function of "generating a sequence of discrete enhanced values. '190 Patent at 10:55–57. In the second embodiment, adaptive notch filters 1300 and 1310 of Figure 13 together perform the recited function. '190 Patent at 39:45–41:62.

Therefore, the corresponding structure for this limitation is either element 204 of Figure 2, a combination of elements 1300 and 1310 of Figure 13, or equivalents of either structure.

"digital filtration means, responsive to the generation of said sequence of discrete sampled values, for generating a sequence of discrete enhanced values"

Micro Motion's Proposed Construction	Invensys's Proposed Construction
Function: generating a sequence of discrete enhanced values. Corresponding structure: digital filter with variable parameters.	Function: generating a sequence of discrete enhanced values. Corresponding structure: Adaptive Notch Filters 204, 1300, and 1310; 4:63-6:47; 22:12-24:23; 39:45-41:62.

Micro Motion argues that Invensys's proposal of using the same structural construction for "digital notch filtration means" and "digital filtration means" is precluded by the doctrine of claim differentiation. Docket No. 124 at 24. Invensys responds that use of the term "digital filtration means" is simply the result of a USPTO error, and since it has the same function as "digital notch filtration means," the structure should also be the same. Docket No. 138 at 15. Citing the prosecution history, Invensys contends this term was not meant to be included in claim 35 of the '190 Patent. *Id.* Invensys demonstrates that Micro Motion attempted to amend claim 35 to change "digital notch filtration means" to 'digital filtration means," but that this amendment was rejected. *Id.* Because Invensys finds nothing in the prosecution history to suggest that this rejection was ever withdrawn, it appears the amended version of claim 35 was mistakenly included in the issued patent. *Id.* at 15–16. Micro Motion provides no evidence to contradict this argument.

In the context of the specification, a "digital notch filtrations means" and a "digital filtration means" refer to the same structure and have exactly the same function. Additionally, Invensys has provided evidence that inclusion of the two different terms was merely a scrivener's error, further supporting this conclusion. Accordingly, as discussed above, the structure of "digital filtration means" is either element 204 of Figure 2, a combination of elements 1300 and 1310 of Figure 13, or equivalents of either structure.

"phase value determination means, responsive to the generation of said sequence of discrete enhanced values, for generating the phase values of the oscillatory movement of said flow tube"

Micro Motion's Proposed Construction	Invensys's Proposed Construction
Means-plus-function Function: generating the phase values of the oscillatory movement of said flow tube. Corresponding structure: "phase" block that determines the phase of the sinusoidal signals represented by the enhanced discrete sample signals applied to the phase block	Means-plus-function Function: generating the phase values of the oscillatory movement of said flow tube. Corresponding structure: Phase computation element 206; 11:62-13:48; 35:16-61; 33:24-35:11.

Here, Micro Motion argues that the proper structure for this term does not require the specificity proposed by Invensys. Docket No. 124 at 24–25. Micro Motion also contends the patentee did not intend to limit this function solely to block 206 since the phase of sinusoidal signals may be determined in multiple ways. *Id.* at 25. Invensys responds that while there may be multiple ways to determine the phase values, the specification discloses only one such structure to perform this function, element 206 of Figure 2. Docket No. 138 at 16–17. Invensys further argues that Micro Motion's proposed construction is also entirely functional and therefore inappropriate as a structural definition. *Id.* at 17.

Invensys's proposal correctly identifies the only structure in the specification that corresponds to the agreed function for this limitation. Further, as Invensys points out, Micro Motion's proposal for the structure of this limitation is a purely functional definition, which cannot provide the structure for a means-plus-function limitation. *Noah Sys., Inc. v. Intuit, Inc.*, 675 F.3d 1302, 1316–17 (Fed. Cir. 2012). As discussed above, in exchange for the benefit of means-plus-function claiming, the patentee's claims are interpreted to include the actual disclosed corresponding structure and not a functional description or generic version of that structure. The phase computation element 206 is clearly linked to the agreed function of

"generating the phase values of the oscillatory movement of said flow tube." Accordingly, the structure for this term is the phase computation element 206 of Figure 2 or an equivalent structure.

"phase difference means, responsive to the generation of said phase values, for determining a phase difference between the output signals of said first and second sensors" and "phase difference computation means to determine a phase difference between the output signals of said first and second sensors"

Micro Motion's Proposed Construction	Invensys's Proposed Construction
Means-plus-function Function: determining a phase difference between the output signals of said first and second sensors. Corresponding structure: "Δt Calculation" block that receives phase information related to the sensor signals.	Means-plus-function Function: determining a phase difference between the output signals of said first and second sensors. Corresponding structure: Phase computation element 208; 13:12-48; 33:24-35:11.

The parties agree that the "Δt Calculation," as represented by element 208 of Figures 2 and 12, is ***an*** appropriate structure. Micro Motion argues, however, that the claims are not limited exclusively to block 208, but to any "Δt Calculation" block that receives phase information related to the sensor signals. Docket No. 124 at 26.

As in the previous term, Micro Motion improperly proposes functional language for a structural definition and seeks to expand the structure beyond what is recited in the specification. In this respect, Micro Motion's proposal is at odds with the legal requirements of means plus function claiming. The Court agrees with the parties that the specification clearly links the function of "determining a phase difference between the output signals of said first and second sensors" with the "Δt Calculation" element 208. Figure 12, in particular, shows the element implemented in hardware. Accordingly, the corresponding structure for this term is "Δt Calculation" element 208 of Figures 2 and 12, and equivalents thereof.

"mass flow measurement means, responsive to the determination of phase difference, for determining a mass flow rate value of the material flowing through the flow tube"

Micro Motion's Proposed Construction	Invensys's Proposed Construction
Function: determining a mass flow rate value of the material flowing through the flow tube. Corresponding structure: "Mass Flow Computation" block that receives information related to phase difference from the "Δt Calculation" block.	Function: determining a mass flow rate value of the material flowing through the flow tube. Corresponding structure: Mass Flow Computation Element 290; 33:13-34:67 Indefinite for failure to disclose an algorithm.

Here, Micro Motion argues that Invensys improperly limits the structure to block 290 and further argues that because the '190 Patent explains that the mass flow computation measurements are known in the art, this limitation is not indefinite. Docket No. 124 at 26–27. Invensys contends that because there is no algorithm disclosed for programming the mass flow computation element 290—which the parties agree is a computer element—this limitation is indefinite. Docket No. 143 at 3–4. Invensys explains that the '190 Patent specification merely states the function performed by element 290—"appropriate corrections and scaling to compensate for the effects of temperature and other environmental factors." *Id.* at 5 (quoting '190 Patent at 36:30–32). Further, Invensys contends, the failure to include an algorithm is not cured simply because one of skill in the art would understand how to perform the function. *Id.* at 5–6.

While it is a tenant of patent law that a computer-implemented means-plus-function limitation must disclose an algorithm or instructions for programming the corresponding structure, in this case, an acceptable algorithm is disclosed in the specification. *Aristocrat Techs. Australia Pty Ltd. v. Int'l Game Technology*, 521 F.3d 1328, 1333 (Fed. Cir. 2008). Regarding mass flow computation element 290, the '190 Patent specification explains:

> As is well known in the art, the Δt value is only approximately proportional to the mass flow rate in the flow tubes. Mass flow computation element 290 corrects

> the Δt value to generate the mass flow rate and apply it to utilization 292 of FIG. 2 over path 155. Element 290 performs appropriate corrections and scaling to compensate for the effects of temperature and other environmental factors.

'190 Patent at 36:25–33. The specification also explains that:

> The Δt value is approximately proportional to the mass flow rate of the material flowing through the flow tubes of the Coriolis flowmeter. Other factors, well known in the art, are used to correct the calculated mass flow rate to adjust for temperature variations and other factors.

'190 Patent at 36:25–33. Based on these passages, the specification provides a sufficient algorithm, namely: (1) receive the Δt value; (2) determine a mass flow rate proportional to the Δt; and (3) correct and scale the determined mass flow rate to adjust for temperature variation and other environmental factors. Because an adequate algorithm is provided for programming the mass flow computation element 290, this limitation is not indefinite.

Accordingly, the structure for this term is mass flow computation element 290 of Figure 2 and the disclosed algorithm discussed above, or an equivalent structure.

II. Motion for Summary Judgment of Indefiniteness

Invensys also moves for summary judgment asserting that claims 1 and 35 of the '190 Patent and that all independent claims of the '131 Patent are invalid as indefinite under 35 U.S.C. § 112(b).

'131 Patent

As previously discussed, all three independent claims of the '131 Patent are indefinite because the plain language of the claims requires performing a calculation that is mathematically impossible. *See supra* at 9–11. Accordingly, Invensys's Motion is **GRANTED** as to the '131 Patent.

’190 Patent

As previously discussed, Invensys argues that because the ’190 Patent fails to teach an algorithm or programming instructions for the mass flow computation block, a means-plus-function limitation of claims 1 and 35, the claims are indefinite. Docket No. 143 at 1. Because an acceptable algorithm is disclosed in the specification, this term is not indefinite. Accordingly, Invensys’s Motion is **DENIED** as to the ’190 Patent.

CONCLUSION

For the foregoing reasons, the Court hereby **ADOPTS** the claim constructions as set forth above. For ease of reference, the Court’s claim interpretations are set forth in a table in Appendix A. Further, the Court **GRANTS IN PART** and **DENIES IN PART** Invensys’s Motion for Summary Judgment.

So ORDERED and SIGNED this 6th day of August, 2014.

LEONARD DAVIS
UNITED STATES DISTRICT JUDGE

APPENDIX A

Terms, Phrases, or Clauses	Court's Construction
"enhanced value[s]"	"improved value[s] with significantly reduced noise"
"digital notch filtration means, responsive to the generation of said sequence of discrete sampled values, for generating a sequence of discrete enhanced values"	This is a means-plus-function element under 35 U.S.C. § 112, ¶ 6. Function: generating a sequence of discrete enhanced values. Structure: either element 204 of Figure 2, a combination of elements 1300 and 1310 of Figure 13, or equivalents of either structure
"digital filtration means, responsive to the generation of said sequence of discrete sampled values, for generating a sequence of discrete enhanced values"	This is a means-plus-function element under 35 U.S.C. § 112, ¶ 6. Function: generating a sequence of discrete enhanced values. Structure: either element 204 of Figure 2, a combination of elements 1300 and 1310 of Figure 13, or equivalents of either structure
"phase value determination means, responsive to the generation of said sequence of discrete enhanced values, for generating the phase values of the oscillatory movement of said flow tube"	This is a means-plus-function element under 35 U.S.C. § 112, ¶ 6. Function: generating the phase values of the oscillatory movement of said flow tube Structure: phase computation element 206 of Figure 2 or an equivalent thereof
"phase difference means, responsive to the generation of said phase values, for determining a phase difference between the output signals of said first and second sensors"	This is a means-plus-function element under 35 U.S.C. § 112, ¶ 6. Function: determining a phase difference between the output signals of said first and second sensors. Structure: "Δt Calculation" element 208 of Figure 2 and the disclosed algorithm or an equivalent thereof

"mass flow measurement means, responsive to the determination of phase difference, for determining a mass flow rate value of the material flowing through the flow tube"	This is a means-plus-function element under 35 U.S.C. § 112, ¶ 6. Function: determining a mass flow rate value of the material flowing through the flow tube. Structure: Mass Flow Computation Element 290 of Figure 2 and the disclosed algorithm or an equivalent thereof
"notch adaptation means, cooperative with said digital notch filtration means, for altering filter parameters of said digital notch filtration means"	**[AGREED]** This is a means-plus-function element under 35 U.S.C. § 112, ¶ 6. Function: altering filter parameters of said digital notch filtration means. Structure: element 1806 of FIG. 18, which is operable to update the parameters of the notch filters."
"phase difference computation means to determine a phase difference between the output signals of said first and second sensors"	This is a means-plus-function element under 35 U.S.C. § 112, ¶ 6. Function: determining a phase difference between the output signals of said first and second sensors. Structure: "Δt Calculation" element 208 of Figure 2 and the disclosed algorithm or an equivalent thereof
"calculating dot products of said normalized pulsation and said signals from said first pick-off sensor and said second pick-off sensor to translate said signals to said center frequency"	**Indefinite**
"decimating said samples"	*Construction moot in light of "calculating dot products of said normalized pulsation . . ."*
"calculating a normalized frequency"	*Construction moot in light of "calculating dot products of said normalized pulsation . . ."*
"calculating [a] dot product"	*Construction moot in light of "calculating dot products of said normalized pulsation . . ."*
"normalized pulsation"	*Construction moot in light of "calculating dot products of said normalized pulsation . . ."*
"demodulating … to a center frequency"	*Construction moot in light of "calculating dot products of said normalized pulsation . . ."*
"center frequency"	*Construction moot in light of "calculating dot products of said normalized pulsation . . ."*