

**UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF OHIO  
EASTERN DIVISION**

<b>HICKOK INCORPORATED,</b>	)	<b>CASE NO. 1:07CV3565</b>
	)	
<b>Plaintiff,</b>	)	<b>JUDGE CHRISTOPHER A. BOYKO</b>
	)	
<b>vs.</b>	)	<b><u>OPINION AND ORDER</u></b>
	)	
<b>SYSTECH INTERNATIONAL, et al.,</b>	)	
	)	
<b>Defendants.</b>	)	

**CHRISTOPHER A. BOYKO, J.:**

This matter comes before the Court upon Defendant’s and Plaintiff’s Objections to the Report on Proposed Claim Construction of Special Master Joseph V. Colaianni, recommending claim construction for U.S. Patent Nos. 6,298,712 and 6,840,089. Upon consideration of the Objections, Responses, Exhibits, and applicable law, the Court ADOPTS IN PART the Report on Proposed Claim Construction.

**I. BACKGROUND**

**A. Procedural History**

On November 15, 2007, Plaintiff, Hickok Incorporated, filed a Complaint for Patent Infringement involving U.S. Patent Nos. 6,298,712 (the “712 Patent”) and 6,840,089 (the “089 Patent”) against Defendant Systech International, LLC. Defendant Delphi Corporation was named in a Second Amended Complaint on June 12, 2008. On December 7, 2011, the

Court appointed Joseph V. Colaianni to serve as Special Master for claim construction. Mr. Colaianni conferred with the Parties on April 18, 2012 and submitted his Report on Proposed Claim Construction on August 23, 2012. Pursuant to Fed. R. Civ. P. 53(f), the Parties submitted their Objections to the Special Master's Report and this Opinion and Order follows.

### **B. The '712 and '089 Patents**

The '712 and '089 Patents relate to testing for acceptable leakage in a fuel system. Specifically, the '712 Patent relates to fuel cap leak testing and the '089 Patent relates to fuel tank leak testing. The inventions embodied in these Patents are in response to the leakage rate standards set by the Federal Environmental Protection Agency as well as other governmental entities. However, due to the cost and complexity of accurate leakage testing, providing a workable system for large scale testing of vehicles is not routine. The systems of the '712 and '089 Patents provide testing based on a leakage through the subject of the test (either the tank or fuel cap) and an orifice. Briefly stated, the primary principle of operation of the Patents includes: comparing a ratio of the time to leak through the subject of the test and the orifice and the time to leak through just the orifice to a standard ratio to determine whether the leak rate is acceptable.

## **II. LEGAL STANDARDS**

### **A. Civil Rule 53 Standard**

Under Fed. R. Civ. P. 53(f), parties must file an objection within twenty-one days after a copy of the Special Master's Report is served. Fed. R. Civ. P. 53(f)(2). The District Court must then review the Special Master's factual and legal conclusions that are specifically objected to by either party. Fed. R. Civ. P. 53(f)(3), 53(f)(4); *see also Hockstein v. Microsoft*

*Corp.*, 730 F. Supp. 2d 714, 717 (E.D. Mich. 2010), *aff'd* 430 F. App'x 898 (Fed. Cir. 2011).

## **B. The Claim Construction Process**

Claim construction is a matter of law for the Court to determine. *Markman v. Westview Instruments*, 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996). The Court's task in this regard is to "inform the meaning of the claim language." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1317 (Fed. Cir. 2005) (en banc). Put another way, the Court's assignment is "the contextual interpretation of language." *Smithkline Beecham Corp. v. Apotex Corp.*, 403 F.3d 1331, 1339 (Fed. Cir. 2005). The three main sources for claim construction are the claims themselves, the written specification of which the claims are a part, and the prosecution history or file wrapper representing the back-and-forth discussion between the inventor and the Patent and Trademark Office ("PTO"). *Markman*, 52 F.3d at 979-80. These sources are collectively referred to as the intrinsic record of the patent. *Chimie v. PPG Indus. Inc.*, 402 F.3d 1371, 1377 (Fed.Cir.2005).

The words of a claim "are generally given their ordinary and customary meaning." *Phillips*, 415 F.3d at 1312. The ordinary and customary meaning is to be determined from the perspective of one of ordinary skill in the art at the time of the invention. *Id.* at 1313. "Importantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." *Id.*

Accordingly, the court first looks to the claim language, read in view of the specification. *Id.* at 1315 (stating that the 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”). However, while the court may look to the written description to define a term already in a claim limitation, the court may not read a limitation from the written description into a claim. *Id.* at 1323. In other words, although it is often stated that a patentee may be his own lexicographer, “a claim must explicitly recite a term in need of definition before a definition may enter the claim from the written description.” *Renishaw PLC v. Marposs Societa per Azioni*, 158 F.3d 1243, 1248 (Fed. Cir. 1998).

The prosecution history is also relevant to claim construction as part of the intrinsic record. *Phillips*, 415 F.3d at 1317. For example, an inventor may disclaim a particular claim construction during prosecution before the PTO. *Hockerson-Halberstadt, Inc. v. Avia Group Intern., Inc.*, 222 F.3d 951, 956 (Fed. Cir. 2000). However, prosecution history is often ambiguous, *Inverness Medical Switzerland v. Warner Lambert Co.*, 309 F.3d 1373, 1382 (Fed. Cir. 2002); and courts must consider it carefully. *Phillips*, 415 F.3d at 1317 (“[B]ecause the prosecution history represents an ongoing negotiation between the Patent and Trademark Office (‘PTO’) and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes.”). While the prosecution history, including art referenced in the patent, may be used to inform the meaning of the claims, *V-Formation, Inc. v. Benetton Group Spa*, 401 F.3d 1307, 1311 (Fed. Cir. 2005), using a prior art reference to infer what the Examiner or the applicant thought about the meaning of a term, based on whether a particular claim interpretation would read on the reference, is not an appropriate use of the prosecution history. At claim construction, the court is “not concerned with the state or scope of the prior art.” *Sky Technologies, LLC v. Ariba, Inc.*, 491 F.Supp. 2d, 154, 157 (D.Mass. 2007) (citations

omitted). The court “is also not concerned with how far the patent or claims as a whole may extend in terms of breadth of subject matter. A court is concerned only with the interpretation of a disputed term.” *Id.*

Other evidence of claim meaning, such as inventor testimony, expert testimony, and lay or technical dictionary definitions, is referred to as extrinsic evidence. *Phillips*, 415 F.3d at 1317. However, extrinsic evidence is less important than the intrinsic evidence and cannot contradict a claim definition from the intrinsic record. *Id.* at 1318-19; *see also C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 861 (Fed. Cir. 2004) (explaining “that the intrinsic record is the primary source for determining claim meaning”). The only extrinsic evidence offered by the parties in this case is from general purpose and technical dictionaries.

### **III. ANALYSIS**

#### **A. Defendants’ Objections**

Defendants raise only a single objection to the Special Master’s Report. Regarding claim 4 of U.S. Patent No. 6,840,089, Defendants argue that the Special Master improperly construed the claim term “means for producing an output signal in response to said comparison.” The Special Master construed the claim term to mean the “microprocessor configured to product [sic] an output signal in response to the comparison” because “the system directly responsive to [the] signal [produced in response to the comparison] can only be the microprocessor.” ECF DKT #123, at 15-16. Defendants argue that because the voltage comparator *outputs* a signal, and the microprocessor receives the *input*, the voltage comparator necessarily produces the output signal in response to the said comparison. ECF DKT #124, at 2. Therefore, Defendants propose that the claim construction be “a voltage

comparator and equivalents thereof.” *Id.*

The Court adopts the Special Master’s construction<sup>1</sup> because the claim language reads “means for producing an output signal *in response to said comparison*” (emphasis added) where the said comparison is a “means for comparing a pressure value. . . .” The Special Master properly construed the term “means for comparing a pressure value” as “*a voltage comparator*, an instrumentation amplifier, a DAC, and a microprocessor configured to compare a pressure value . . .” (emphasis added). ECF DKT #123, at 14-15. Therefore, when read in light of the entire claim language, the means for producing an output signal *in response* to the said comparison cannot be the voltage comparator, because the voltage comparator is the means for producing the comparison. As the Special Master appropriately analyzed, the system directly responsive to the voltage comparator can only be the microprocessor. *Id.*; *see also* ‘089 Specification, col. 3, ll. 4-6 (“The output of voltage comparator 58 is connected to an input to microprocessor 50.”).

## **B. Plaintiff’s Objections**

Plaintiff presents three objections to the Special Master’s Report. First, Plaintiff requests that the Court modify the “means plus function” claim constructions to include the language “and equivalents thereof.” ECF DKT #125, at 2. Plaintiff cites to 35 U.S.C. § 112, ¶ 6, which states that “means plus function” claims “shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.” The Special Master’s failure to include this language appears to be a mere

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<sup>1</sup> The Court, however, corrects the typo in the Special Master’s Report so the claim construction reads “microprocessor configured to produce . . . .”

oversight. Therefore, the Court adds this language where necessary.

Plaintiff next requests that the Court modify the Special Master's construction of the term "means for determining the time required for the pressure within the fuel tank to decay, between predetermined pressure levels, through any leaks which might exist in the fuel tank and the time required for the pressure within the fuel tank to decay, between predetermined pressure levels, through the combination of any leaks which might exist in the fuel tank and said reference orifice when said means for directing gas from the fuel tank to said reference orifice is actuated." ECF DKT #125, at 3. Plaintiff believes the Special Master's construction inadvertently omitted the phrase "for the pressure in the fuel tank to decay" and inserted the term "and." *Id.* The Special Master's Report provides no indication as to why the phrase in question was not included in the construction or why the term "and" was included. Therefore, it appears the Special Master's Report simply contains a clerical error and the Court adopts the Special Master's construction with Plaintiff's proposed modifications.

Finally, Plaintiff presents a substantive objection to the Special Master's construction of the claim term "predetermined ratiometric time relationships." The Special Master construed the term to mean "time relationships expressed in the form of ratios determined before the start of the test." ECF DKT #123, at 13-14. The Special Master specifically noted that the word "ratios" should be plural because the term "ratiometric time relationships" is plural. ECF DKT #123, at 14. Plaintiff argues that "because the time relationships are expressed in the form of a ratio, it does not follow that having more than one time relationship would mean that there would need to be more than one ratio" and "[t]wo time relationships

can be expressed in one ratio (one as the numerator and one as the denominator).” ECF DKT #125, at 4. Plaintiff essentially argues that the value of “the time relationships” is a ratio of a ratio, reasoning that the value of the “predetermined ratiometric time relationships” is the same as the “predetermined standard ratio” of claim 5, step k, which is described in the ‘089 Specification as the “calculated ratio.” ECF DKT #125, at 5.

The ‘089 Specification provides that “[t]ime T2 is then divided by time T1 and the resulting ratio is compared to a *calculated ratio* that was derived from the *two ratios* that were stored in EEPROM 84 during factory calibration of the system.” ‘089 Specification, col. 8, ll. 13-16 (emphasis added). This language unmistakably distinguishes the single calculated ratio from the multiple predetermined stored ratios. As further evidence of this distinction, the drafter of the Specification clearly referred to multiple relationships in claim 4, and only a single ratio in claim 5, indicating a desired distinction between the two stored ratios and the calculated ratio derived from the two predetermined stored ratios.<sup>2</sup> Accordingly, the Special Master’s construction is consistent with the ‘089 Specification, and is adopted, because the multiple time relationships clearly correspond to the two ratios in the Specification. Plaintiff’s argument contradicts the language in the ‘089 Specification and is without merit.

#### **IV. CONCLUSION**

In light of the above, the Court ADOPTS IN PART the Special Master’s Report on Proposed Claim Construction with the following clerical modifications, indicated in bold, in

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<sup>2</sup> The Special Master also distinguishes the terms “predetermined ratiometric time relationships” and “predetermined standard ratio” in his construction of the latter term, citing to the ‘089 Specification, col. 8, ll. 13-19. ECF DKT #123, at 17-18.



the table below.

Claim Term	Court's Modified Construction
<p>“means for determining the time required for the pressure within the fuel tank to decay, between predetermined pressure levels, through any leaks which might exist in the fuel tank and the time required for the pressure within the fuel tank to decay, between predetermined pressure levels, through the combination of any leaks which might exist in the fuel tank and said reference orifice when said means for directing gas from the fuel tank to said reference orifice is actuated”</p>	<p>An instrumentation amplifier, a microprocessor, a digital-to-analog converter, a voltage comparator, a timer, <b>and equivalents thereof</b>, wherein the timer may be part of the microprocessor, configured to determine the time required <b>for the pressure within the fuel tank to decay</b>, between predetermined pressure levels, through any leaks which might exist in the fuel tank and the time required for the pressure with the fuel tank to decay, <b>and</b> between predetermined pressure levels, through the combination of any leaks which might exist in the fuel tank and said reference orifice when said means for directing gas from the fuel tank to said reference orifice is actuated.</p>
<p>“means for comparing said times determined by said time determining means with predetermined ratiometric time relationships for said pressure decays to occur in order to determine whether the fuel tank has an acceptable leakage rate”</p>	<p>A microprocessor, <b>and equivalents thereof</b>, that compares said times determined by the means for determining with <b>a</b> predetermined ratiometric time relationships for the pressure decays to occur in order to determine whether a fuel tank has an acceptable leak.</p>
<p>“means for comparing a pressure value determined by said pressure determining means with a predetermined pressure value”</p>	<p>A voltage comparator, an instrumentation amplifier, a DAC, a microprocessor, <b>and equivalents thereof</b>, configured to compare a pressure value determined by said pressure determining means with a predetermined pressure value.</p>
<p>“means for producing an output signal in response to said comparison”</p>	<p>A microprocessor <b>and equivalents thereof</b> configured to <b>product produce</b> an output signal in response to the comparison.</p>

**IT IS SO ORDERED.**

**s/ Christopher A. Boyko**  
**CHRISTOPHER A. BOYKO**  
**United States District Judge**

Dated: April 26, 2013