

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of

**CERTAIN HYBRID ELECTRIC VEHICLES
AND COMPONENTS THEREOF**

Inv. No. 337-TA-998

ORDER No. 8: Construing Terms of the Asserted Patents

(October 6, 2016)

The claim terms construed in this Order are done so for the purposes of this Investigation. Hereafter, discovery and briefing in this Investigation shall be governed by the construction of the claim terms in this Order. Those terms not in dispute need not be construed. *See Vanderlande Indus. Nederland BV v. Int'l Trade Comm'n*, 366 F.3d 1311, 1323 (Fed. Cir. 2004) (noting that the administrative law judge need only construe disputed claim terms).

Table of Abbreviations

CMIB	Complainants' Initial Markman Brief
CMRB	Complainants' Reply Markman Brief
RVMIB	Respondent VW Initial Markman Brief
RVMRB	Respondents VW Reply Markman Brief
RPMIB	Respondent Porsche Initial Markman Brief
RPMRB	Respondent Porsche Reply Markman Brief
Tr.	Transcript of the Markman Hearing

Table of Contents

I.	INTRODUCTION	4
II.	RELEVANT LAW	5
III.	LEVEL OF ORDINARY SKILL	8
	A. The Parties’ Contentions	8
	1. Respondent Porsche’s Contentions	8
	2. Complainants’ Contentions	9
	B. Analysis	9
IV.	CLAIMS CONSTRUCTION OF DISPUTED TERMS	10
	A. “road load” (applicable to the ’347, ’634, and ’097 patents)	10
	1. The Parties’ Contentions	11
	2. Analysis	16
	B. “setpoint” (’347, ’634, and ’097 patents)	16
	1. The Parties’ Contentions	17
	2. Analysis	32
	C. Remaining Claim Terms	36

I. INTRODUCTION

By publication of a notice in the Federal Register on March 4, 2016, the U.S. International Trade

Commission ordered that:

Pursuant to subsection (b) of section 337 of the Tariff Act of 1930, as amended, an investigation be instituted to determine whether there is a violation of subsection (a)(1)(B) of section 337 in the importation into the United States, the sale for importation, or the sale within the United States after importation of certain hybrid electric vehicles and components thereof by reason of infringement of one or more of claims 24, 25, 27, 28, 30, 32, and 41 of [U.S. Patent 7,104,347]; claims 33-44, 46, 50, 52-55, 91, 92, 94, 95, 97, 110, 112, 226, 227, 229-231, 239-241, 252, 253, 255-259, 265-267, 278, 279, 281-283, 285, 289-291 of [U.S. Patent 7,237,634]; and claims 21, 27, 30, 33, and 37 of [U.S. Patent 8,214,097], and whether an industry in the United States exists as required by subsection (a)(2) of section 337.

81 F.R. 32344 (May 23, 2016). The Complainants in this Investigation are Paice LLC and Abell Foundation, Inc., and Respondents are Volkswagen AG, Volkswagen Group of America, Inc., Dr. Ing. H.C. F. Porsche AG, Porsche Cars North America, Inc., Audi AG, and Audi of America, LLC. The Office of Unfair Import Investigations has not and will not participate as a party in this Investigation.

On June 2, 2016, I issued the procedural schedule for this investigation. (*See* Order No. 3 (June 2, 2016).) In accordance with that schedule, the parties exchanged: (i) on July 22, 2016, their lists of proposed terms for construction, as required by G.R. 8.1; and (ii) on July 29, 2016, their preliminary constructions for those terms, as required by G.R. 8.2. The parties filed their Joint Claim Construction Chart on August 5, 2016. Thereafter, on August 19, 2016, the parties filed their initial claim construction briefs and on September 2, 2016, the parties filed their rebuttal claim construction briefs. On September 12, 2016, in accordance with the procedural schedule, I held a technology tutorial and Markman hearing.

II. RELEVANT LAW

“An infringement analysis entails two steps. The first step is determining the meaning and scope of the patent claims asserted to be infringed. The second step is comparing the properly construed claims to the device accused of infringing.” *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995) (*en banc*) (internal citations omitted), *aff'd*, 517 U.S. 370 (1996). Claim construction is a “matter of law exclusively for the court.” *Id.* at 970-71. “The construction of claims is simply a way of elaborating the normally terse claim language in order to understand and explain, but not to change, the scope of the claims.” *Embrex, Inc. v. Serv. Eng'g Corp.*, 216 F.3d 1343, 1347 (Fed. Cir. 2000).

Claim construction focuses on the intrinsic evidence, which consists of the claims themselves, the specification, and the prosecution history. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) (*en banc*); *see also Markman*, 52 F.3d at 979. As the Federal Circuit in *Phillips* explained, courts must analyze each of these components to determine the “ordinary and customary meaning of a claim term” as understood by a person of ordinary skill in art at the time of the invention. 415 F.3d at 1313. “Such intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language.” *Bell Atl. Network Servs., Inc. v. Covad Commc'ns Grp., Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001).

“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*, 415 F.3d at 1312 (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). “Quite apart from the written description and the prosecution history, the claims themselves provide substantial guidance as to the meaning of particular claims terms.” *Id.* at 1314; *see also Interactive Gift Express, Inc. v. Compuserve Inc.*, 256 F.3d 1323, 1331 (Fed. Cir. 2001) (“In construing claims, the analytical focus must begin and remain centered on the

language of the claims themselves, for it is that language that the patentee chose to use to ‘particularly point [] out and distinctly claim [] the subject matter which the patentee regards as his invention.’”). The context in which a term is used in an asserted claim can be “highly instructive.” *Phillips*, 415 F.3d at 1314. Additionally, other claims in the same patent, asserted or unasserted, may also provide guidance as to the meaning of a claim term. *Id.*

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.” *Id.* at 1315 (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). “[T]he specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor’s lexicography governs.” *Id.* at 1316. “In other cases, the specification may reveal an intentional disclaimer, or disavowal, of claim scope by the inventor.” *Id.* As a general rule, however, the particular examples or embodiments discussed in the specification are not to be read into the claims as limitations. *Id.* at 1323. In the end, “[t]he construction that stays true to the claim language and most naturally aligns with the patent’s description of the invention will be ... the correct construction.” *Id.* at 1316 (quoting *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998)).

In addition to the claims and the specification, the prosecution history should be examined, if in evidence. *Id.* at 1317; *see also Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 913 (Fed. Cir. 2004). The prosecution history can “often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be.” *Phillips*, 415 F.3d at 1317; *see also Chimie v. PPG Indus. Inc.*, 402 F.3d 1371, 1384 (Fed. Cir. 2005) (“The purpose of consulting the prosecution history in construing a claim is to exclude any interpretation that was disclaimed during prosecution.”).

When the intrinsic evidence does not establish the meaning of a claim, then extrinsic evidence (*i.e.*, all evidence external to the patent and the prosecution history, including dictionaries, inventor testimony, expert testimony, and learned treatises) may be considered. *Phillips*, 415 F.3d at 1317. Extrinsic evidence is generally viewed as less reliable than the patent itself and its prosecution history in determining how to define claim terms. *Id.* at 1317. “The court may receive extrinsic evidence to educate itself about the invention and the relevant technology, but the court may not use extrinsic evidence to arrive at a claim construction that is clearly at odds with the construction mandated by the intrinsic evidence.” *Elkay Mfg. Co. v. Ebco Mfg. Co.*, 192 F.3d 973, 977 (Fed. Cir. 1999).

The construction of a claim term is generally guided by its ordinary meaning. However, courts may deviate from the ordinary meaning when: (1) “the intrinsic evidence shows that the patentee distinguished that term from prior art on the basis of a particular embodiment, expressly disclaimed subject matter, or described a particular embodiment as important to the invention”; or (2) “the patentee acted as his own lexicographer and clearly set forth a definition of the disputed claim term in either the specification or prosecution history.” *Edwards Lifesciences LLC v. Cook Inc.*, 582 F.3d 1322, 1329 (Fed. Cir. 2009). *See also Omega Engineering, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1324 (Fed. Cir. 2003) (“[W]here the patentee has unequivocally disavowed a certain meaning to obtain his patent, the doctrine of prosecution disclaimer attaches and narrows the ordinary meaning of the claim congruent with the scope of the surrender.”); *Rheox, Inc. v. Entact, Inc.*, 276 F.3d 1319, 1325 (Fed. Cir. 2002) (“The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution.”). Nevertheless, there is a “heavy presumption that a claim term carries its ordinary and customary meaning.” *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002) (citations omitted). The standard for deviating from the plain and ordinary meaning is

“exacting” and requires “a clear and unmistakable disclaimer.” *Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1366-67 (Fed. Cir. 2012); *see also Epistar Corp. v. Int’l Trade Comm’n*, 566 F.3d 1321, 1334 (Fed. Cir. 2009) (requiring “expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope” to deviate from the ordinary meaning) (citation omitted).

Courts are not required to construe every claim limitation of an asserted patent. *See O2 Micro Intern. Ltd. v. Beyond Innovation Technology Co.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008) (citations omitted). *See also U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997) (stating that claim construction “is not an obligatory exercise in redundancy.”). Rather, “claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement.” *O2 Micro*, 521 F.3d at 1362 (quoting *U.S. Surgical*, 103 F.3d at 1568); *see also Embrex, Inc.*, 216 F.3d at 1347 (“The construction of claims is simply a way of elaborating the normally terse claim language in order to understand and explain, but not to change, the scope of the claims.”) (citation omitted). In addition, “[a] determination that a claim term ‘needs no construction’ or has the ‘plain and ordinary meaning’ may be inadequate when a term has more than one ‘ordinary’ meaning or when reliance on a term’s ‘ordinary’ meaning does not resolve the parties’ dispute.” *O2 Micro*, 521 F.3d at 1361.

III. LEVEL OF ORDINARY SKILL

A. The Parties’ Contentions

1. Respondent Porsche’s Contentions

Respondents do not offer or explain the education, skill, and experience necessary for a person of ordinary skill in the art in their briefs. Instead, Respondent’s proffered expert, Dr. Glenn R. Bower, P.E., offers a detailed explanation of what he considers to be required in paragraphs 22

– 29 of his August 19, 2016 declaration provided by Respondent Porsche in their initial Markman Brief. In general, Dr. Bower concludes that for the relevant timeframe for the asserted patents, a person of skill in the art would have at least a bachelor’s degree in engineering or physics and at least three years of experience working with hybrid vehicles or have other commensurate education and experience. (Bower Declaration at 29.)

2. Complainants’ Contentions

Nor do Complainants offer or explain the education, skill, and experience necessary for a person of ordinary skill in the art in their briefs. Instead, Complainants’ proffered expert, Mr. Joseph C. McAlexander, III, P.E., submitted an explanation of what he believes is applicable in paragraph 24 of his September 2, 2016 declaration provided by Complainants as an exhibit to their Markman Reply Brief. Mr. McAlexander opines that a person of ordinary skill in the art for the asserted patents is someone with at least a Bachelor’s of Science degree in electrical engineering or mechanical engineering and at least three years of technical experience in designing, implementing, teaching, testing, or otherwise working with automotive systems, control system logic, or a related field. Mr. McAlexander does disagree with Dr. Bower that a person of ordinary skill in the art have three years of experience working with hybrid vehicles because he opines the field was in its nascent state and would have been interdisciplinary in nature at the time of the patents.

B. Analysis

Both experts essentially agree on the baseline education required of a person of ordinary skill in the art. However, I accept Dr. Bower’s explanation of what experience would have been required of a person of ordinary skill in the art at the time of the granting of the patents. While Dr. Bower does plainly prefer experience with hybrid vehicles as the kind of work experience he opines is qualifying, he leaves it open for other commensurate experience or education, a point

Mr. McAlexander seemingly overlooks. In addition, I find Dr. Bower's education and experience is more relevant to the asserted patents and thus I find his opinion more probative.

Accordingly, I find, for the relevant timeframe of the asserted patents, a person of ordinary skill in the art would have at least a bachelor's degree in engineering or physics, and, at least three years of experience working with hybrid vehicles or other commensurate experience.

IV. CLAIMS CONSTRUCTION OF DISPUTED TERMS

A. "road load" (applicable to the '347, '634, and '097 patents)

The term "road load" exists in asserted claims in each of the Asserted Patents, *e.g.*, the '347 patent at claim 23; the '634 patent at claim 33; and '097 patent at claim 21. For example, claim 33 of the '634 patent states:

33. A method for controlling a hybrid vehicle, comprising:

determining instantaneous road load (RL) required to propel the hybrid vehicle responsive to an operator command;

operating at least one electric motor to propel the hybrid vehicle when the *RL* required to do so is less than a setpoint (SP);

operating an internal combustion engine of the hybrid vehicle to propel the hybrid vehicle when the *RL* required to do so is between the SP and a maximum torque output (MTO) of the engine, wherein the engine is operable to efficiently produce torque above the SP, and wherein the SP is substantially less than the MTO;

operating both the at least one electric motor and the engine to propel the hybrid vehicle when the torque *RL* required to do so is more than the MTO; and

monitoring patterns of vehicle operation over time and varying the SP accordingly.

(emphasis added)

The construction proposed by the parties for the term “road load” is summarized in the table that follows:

Complainants’ Construction	VW and Audi’s Construction	Porsche’s Construction
“the instantaneous torque required for propulsion of the vehicle, which may be positive or negative in value”	“the instantaneous torque required for propulsion of the vehicle, which may be positive or negative in value, to overcome breakaway friction, rolling friction (as in bearings and tire of road friction) and windage (as in drag forces exerted on the vehicle by air) and maintain speed.”	“the amount of instantaneous torque required to propel the vehicle, be it positive or negative”

1. The Parties’ Contentions

1. Complainants’ Contentions

Complainants observe that it and Porsche agree that “road load” (RL) is the instantaneous torque required for propulsion of the vehicle, which may be positive or negative in value. (CMIB at 9.) Yet, after the part the parties agree upon, Complainants allege the VW/Audi Respondents propose a further construction that incorrectly adds unnecessary and inappropriately narrows restrictions and adds confusion. (*Id.*)

Complainants aver its construction for RL is supported by the intrinsic record and that VW has not explained how “Complainants’ construction allegedly recapture[s] what Paice was required to surrender during prosecution” construction is supported by the intrinsic record. (*Id.* and CRMB at 4.) Complainants explain that: (1) the claims provide that RL is the instantaneous torque “required to propel the vehicle,” which is determined “responsive to an operator command; and (2) several claims, *i.e.*, claims 33 and 34, use the term RL and “the torque required to propel the vehicle” interchangeably. (CMIB at 9.) Complainants add that the specification also defines the “road load” as the “vehicle’s instantaneous torque requirements” in several places and teaches

the instantaneous torque required to propel the vehicle is compared to a setpoint (30% of the engine's maximum torque output) to determine whether to run the engine to propel the vehicle. (CMIB at 10.)

Complainants accuse the VW Respondents' seeking to insert an unnecessary requirement that the RL includes "breakaway friction, rolling friction (bearings, tire and road friction) and windage (forces exerted on the vehicle by air). (*Id.*) Complainants assert none of VW's language is necessary or capable of adding clarity to the portion of the construction the parties agree to, *i.e.*, the RL is the instantaneous torque required for propulsion of the vehicle, which may be positive or negative in value. (*Id.*)

Complainants assert that physics and common sense mandates that the instantaneous torque required to propel the vehicle will be affected by all forces, like rolling resistance and wind resistance to the extent such forces are present. (*Id.*) Moreover, the applicant explained these issues during prosecution of the '097 Patent to distinguish claims that use road load to switch operating modes from Paice's own prior art patent (U.S. Patent No. 5,343,970 ("the '970 patent")), which used vehicle speed to switch operating modes. (*Id.*) Complainants offer that Applicant described RL "may be a function of numerous factors, including desired acceleration or deceleration, rolling resistance, wind resistance, inclination of the road surface" while vehicle speed is not by itself. (*Id.* at 10-11.) Complainants note that Applicants distinguished similar prior art that only used accelerator pedal position to select operating modes. (*Id.* at 11.)

Complainants maintain the prosecution history consistently supports the specification, showing that "road load" more captures the total measurement of the instantaneous torque required to propel a vehicle even when the vehicle is climbing or descending a hill when other prior art parameters including vehicle speed and pedal position alone do not. (*Id.*)

Complainants allege that if the VW Respondents argue the term “road load” requires actual real-time measurements of the “breakaway friction, rolling friction (as in bearings and tire of road friction) and windage (as in drag forces exerted on the vehicle by air),” there is no support for that in the claim language or the intrinsic evidence. (*Id.*, and noting the same argument was rejected previously in *Paice LLC v. Hyundai Motor Co.*, No. CIV. WDQ-12-0499, 2014 WL 3725652, at *8 (D. Md. July 24, 2014).) Complainants further allege their construction is consistent with construction adopted in *Paice LLC v. Toyota Motor Corp., et al.*, No. 2:04-CV-211-DF, Dkt. No. 91, 2005 WL 6220101 (E.D. Tex. Sep. 28, 2005); *Paice LLC v. Toyota Motor Corp., et al.*, No. 2:07-CV-180-DF, Dkt. No. 63 at 11 (E.D. Tex. Dec. 5, 2008); *Paice LLC v. Hyundai Motor Co.*, 2014 WL 3725652, at *8.). (*Id.* at 12.)

Complainants also replied to Respondents’ construction briefs. Complainants reiterated that instantaneous torque required to propel the vehicle will necessarily need to consider rolling resistance and wind resistance and thus here is no reason to import these extraneous limitations, particularly because the VW/Audi Respondents admit that “road load” has a well-known meaning.. (CMRB at 3.) Complainants also reiterate that they distinguished prior art that used accelerator pedal position (instead of road load) to select operating modes. (*Id.*)

Continuing, Complainants disagree with VW and contend their proposed construction distinguishes between RL and the driver’s request for torque (the position of the accelerator pedal), explaining that RL is the instantaneous torque required to propel the vehicle, while the driver’s request for torque only relates to accelerator pedal position. (*Id.*) Complainants assert RL and a driver’s request for torque are very different control parameters with the driver’s request for torque being the longstanding approach (going back to conventional vehicles) where the farther the driver pushes down on the accelerator pedal, the more output the gas engine produces, which is not evidence of RL or that the vehicle even used the RL as a control parameter. (*Id.*)

Complainants point out that a vehicle at 30% pedal position will operate very differently if the vehicle is travelling on a flat road, down a hill, or up a steep hill because factors such as rolling resistance, driving conditions, and wind resistance affect RL but have nothing to do with a particular accelerator pedal position. (*Id.*) Complainants admit the position of the accelerator pedal can be an input into a control system calculating RL because the asserted claims recite “determining instantaneous road load (RL) required to propel the hybrid vehicle responsive to an operator command.” (*Id.*) Complainants close by alleging VW has failed to explain how Complainants’ construction allegedly “recapture[s] what Paice was required to surrender during prosecution”. (*Id.*)

2. Respondent VW’s Contentions

The VW/Audi Respondents allege their construction is based on the intrinsic evidence. (RVMRB at 4.) VW alleges that when the Complainants stopped their construction of “the vehicle’s instantaneous torque demands, *i.e.*, that amount of torque required to propel the vehicle at a desired speed,” they erred because proper claims construction demands consideration of the “entire patent” not just a selected portion of the specification. (*Id.* at 4-5, citing *Phillips*, 415 F.3d at 1313; *Trustees of Columbia University in City of New York v. Symantec Corp.*, 811 F.3d 1359, 1366 (Fed. Cir. 2016) for the proposition that a single sentence in a specification cannot overcome overwhelming evidence in other parts of the specification and the provisional application.) According to VW, both the specifications of and their prosecution histories of the patents “repeatedly and affirmatively distinguish the meaning of the term ‘road load,’ and Complainants have argued before the Federal Circuit that this term should be construed in the context of the patents to account for ‘external torque requirements,’ including ‘rolling resistance, driving conditions, and wind resistance.’ (*Id.* at 5, citing *Paice LLC & The Abell Foundation, Inc. v. Ford Motor Company*, No. 16-1745, Appellants’ Opening Brief, D.I. 17 at 18, 32-33 (Fed. Cir. May 23,

2016) (VW/Audi Op. Br., Ex. 13).) VW asserts that soon after Complainants submitted their opening claim construction brief in this investigation, requesting a broader construction of RL, Complainants repeated an argument for a narrow construction in their Federal Circuit reply brief. (*Id.*)

VW argues “the meaning of a term in the relevant art during the relevant time period” may be informed by extrinsic evidence. (*Id.* at 5-6, citing *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015); *see also Vitronics Corp. v. Conceptor, Inc.*, 90 F.3d 1576, 1584 (Fed.Cir.1996) for the proposition how prior art can help to demonstrate how a disputed term is used by those skilled in the art, which when compared to expert testimony concerning what a particular expert believes a term means, can be more indicative of what all those skilled in the art generally believe a certain term means.) VW alleges extrinsic evidence confirms its “construction based on the intrinsic evidence.” (*Id.* at 6.) According to VW, patents and publications dated long before the Paice patents were applied for demonstrate that RL was a technical term used in the art to describe the instantaneous torque required to propel a vehicle to overcome breakway friction, rolling friction, and windage, so as to maintain speed. (*Id.*)

VW accepts that Complainants understand torque required to propel a vehicle “will be affected by things like rolling resistance and wind resistance to the extent such factors are present.” (*Id.* at 7.) VW then argues that although Complainants brought suits against Toyota and Hyundai and used the results as support for their construction that with one exception, the rulings accepted nearly identical constructions proposed by all the parties to those lawsuits. (*Id.*) Thus, according to VW, neither the *Toyota* or *Hyundai* courts considered VW’s proposed construction or the Complainants’ more recent construction in Complainants’ recent arguments to the Federal Circuit defining the meaning of “road load” where VW alleges complainants disclaimed the broad construction they are proposing should be adopted in this investigation. (*Id.* at 7-8.)

3. Respondent Porsche's Contentions

Respondent Porsche's construction is not materially different from Complainants. Accordingly, I have not summarized it.

2. Analysis

Logic compels me to accept Complainants' construction here. Simply put, RL is the amount of instantaneous torque needed to propel the vehicle, whether it is positive or negative. Such a construction necessarily includes any factor that affects the amount of torque needed to propel the vehicle, such as wind resistance, friction of all kinds, etc., because, quite simply, they are all factors affecting the amount of torque needed to propel the vehicle. Hence, rather than repeat Complainants' logic and arguments here, it is enough to say I accept them as supported by existing case law and the facts. The relevant claim language makes it clear that RL can only be a torque value. I specifically find nothing in the specifications or the file wrappers that supports the arguments made by VW in this instance and thus the case law it cites is irrelevant. Contrary to Respondents' argument, I see nothing inconsistent with what Complainants' have argued in any other case from what they argue in this investigation. Thus, I find based on the intrinsic evidence that one of ordinary skill in the art at the time of the invention would construe the term "road load," (RL) as used in the applicable claims, as the instantaneous torque required for propulsion of the vehicle, which may be positive or negative.

B. "setpoint" ('347, '634, and '097 patents)

The "road load" and "setpoint" terms are related to one another and thus they appear together in many of the same claims. *See, e.g.*, '347 patent at claim 23, the '634 patent at claim 33, and the '097 patent at claim 21. As with the "road load" term used above, I have utilized claim 33 of the '634 patent for demonstrative purposes. Claim 33 states:

33. A method for controlling a hybrid vehicle, comprising:

determining instantaneous road load (RL) required to propel the hybrid vehicle responsive to an operator command;

operating at least one electric motor to propel the hybrid vehicle when the RL required to do so is less than a *setpoint (SP)*;

operating an internal combustion engine of the hybrid vehicle to propel the hybrid vehicle when the RL required to do so is between the *SP* and a maximum torque output (MTO) of the engine, wherein the engine is operable to efficiently produce torque above the *SP*, and wherein the *SP* is substantially less than the MTO;

operating both the at least one electric motor and the engine to propel the hybrid vehicle when the torque RL required to do so is more than the MTO; and

monitoring patterns of vehicle operation over time and varying the *SP* accordingly.

The construction proposed by the parties for the term “setpoint” (SP) is summarized in the table that follows:

Complainants’ Construction	VW and Audi’s Construction	Porsche’s Construction
“a definite, but potentially variable value at which a transition between operating modes may occur”	“a pre-defined torque value that may or may not be reset”	“a predefined torque value that may or may not be reset”

1. The Parties’ Contentions

a. Complainants’ Contentions

Complainants allege the dispute between the parties over the “setpoint” is whether it should be a value for triggering the transition between operating modes as Complainants suggest or any “predefined torque value.” (CMIB at 13.) In staking their position, Complainants do not contend that the “setpoint” must always trigger a transition, but that it must have the capability of doing so. (*Id.*) Complainants contend their construction of “setpoint” is consistent with the

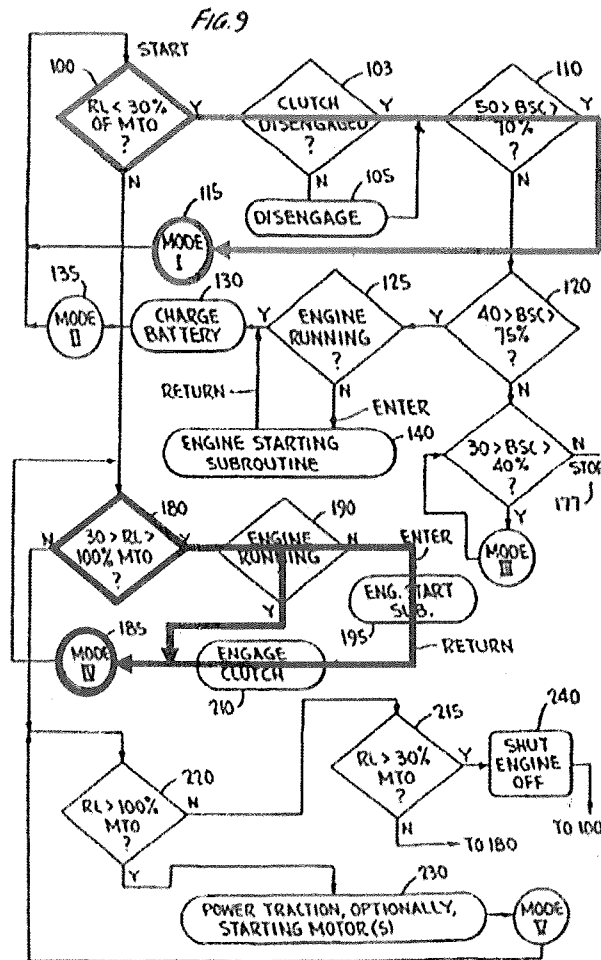
claims and the specification and assert the specification unambiguously defines setpoint as a “transition point.” (*Id.*, citing the ’347 Patent at 40:47-55).

Complainants allege the term “setpoint” is used by the relevant claims to indicate the transition point between modes of operation. (*Id.*) Illustrating their point, Complainants state that claim 33 of the ’634 patent “indicates” the vehicle is controlled by “operating at least one electric motor to propel the hybrid vehicle when the RL required to do so is less the SP and yet also states “operating an internal combustion engine of the hybrid vehicle to propel the hybrid vehicle when the RL required to do so is between the SP and a maximum torque output (MTO) of the engine.” (*Id.*) Complainants contend this makes the SP a variable value, noting that claim 33 of the ’634 patent states that the vehicle is controlled by “monitoring patterns of vehicle operation over time and varying the SP accordingly.” (*Id.* at 13-14.) Complainants also argue it is just important that the specification defines “setpoint” as a “transition point” between operating modes, to wit:

[I]n the example of the inventive control strategy discussed above, it is repeatedly stated that the transition from low-speed operation to highway cruising occurs when road load is equal to 30% of MTO. ***This setpoint, referred to in the appended claims as “SP”, and sometimes hereinafter as the transition point*** (i.e., between operation in modes I and IV) is obviously arbitrary and can vary substantially, e.g., between 30-50% of MTO, within the scope of the invention.

(*Id.* at 14, referencing the ’347 Patent at 40:47-55.) Thus, Complainants argue the patentee became his own lexicographer by interchangeably using the two terms setpoint and transition point which is a point selected to trigger changing from one mode to another. (*Id.*, citing *Edwards Lifesciences LLC v. Cook Inc.*, 582 F.3d 1322, 1329 (Fed. Cir. 2009).)

Next, Complainants allege that Figure 9, a depiction of the “control program run by the microprocessor”—shows that the control algorithm compares the road load to a setpoint (e.g., 30% of MTO) to transition between Mode I and Mode IV:



(*Id.* at 14-25, also citing 41:66-42:2 (“FIG. 9 thus shows the main decision points of the control program run by the microprocessor, with the transition point between mode I, low-speed operation, and mode IV highway cruising, set at a road load equal to 30% of MTO”).)

Complainants contend that Respondents’ construction (“a pre-defined torque value that may or may not be reset”) is contrary to specification and provides no meaning to the term “setpoint.” (*Id.* at 15.) Complainants point out that the specification explains that the microprocessor effects the transition by comparing inputs (*e.g.*, road load or battery state of charge) against setpoints and that the setpoints may be dependent upon the charge remaining in the battery plus a torque-setpoint:

[T]he microprocessor tests sensed and calculated values for system variables, such as the vehicle's instantaneous torque requirement, i.e., the "road load" RL, the engine's instantaneous torque output ITO, both being expressed as a percentage of the engine's maximum torque output MTO, and the state of charge of the battery bank BSC, expressed as a percentage of its full charge, *against* setpoints, and uses the results of the comparisons to control the mode of vehicle operation.

(*Id.* at 15-16, referencing the '347 patent at 40:22-31 and at 41:3-9.) Complainants allege this means there should be no limitation to a torque value. (*Id.* at 16.)

Complainant maintains the claims require the setpoint to be a torque value because the road load (which is a definitely a torque value) is linked to a setpoint to effect the operating mode transition. (*Id.*) This makes defining "setpoint" as a "torque value" gratuitous and thus Respondents' addition of the word "torque" adds no meaning to "setpoint" the claim does not already require. (*Id.*) Hence, according to Complainants, Respondents' construction is illusory. (*Id.*, citing *Mangosoft, Inc. v. Oracle Corp.*, 525 F.3d 1327, 1330-31 (Fed. Cir. 2008) for the proposition that a claim term must have meaning and that a construction that "ascribes no meaning to the term . . . not already implicit in the rest of the claim" is incorrect); *Merck & Co. v. Teva Pharms. USA, Inc.*, 395 F.3d 1364, 1372 (Fed. Cir. 2005).)

In responding to the Respondents' arguments, Complainants argue their construction is consistent with the intrinsic evidence of the Asserted Patents, which means a "setpoint" is something that is set in the control algorithm, causing a machine to change operating modes and for the Asserted Patents this means there is a transition between operating modes of the hybrid vehicle. (CMRB at 5.) Complainants contend the relevant claims and the specification establish "setpoint" is not a numerical value unrelated to the control system, but a point that triggers a transition between an operating mode in which the electric motor propels the vehicle, to an operating mode in which the gas engine propels the vehicle, which it compares to a thermostat having a setpoint to turn it on. (*Id.*) Thus, Complainants allege the Asserted Patents have a

setpoint in the control algorithm turns the gas engine on or off based upon a comparison or RL to the setpoint to effect the transition. (*Id.*)

Complainants assert the asserted claims use setpoint in just this plain language manner. (*Id.*) Complainants reiterate that the patentee acted as his own lexicographer and expressly defined “setpoint” as a “transition point”—a point selected to trigger transition from one mode to another, the setpoint’s only purpose. (*Id.*)

Complainants assert Respondents essentially agree the purpose of the setpoint is to trigger the transition from one operating mode to another is consistent with the term’s plain meaning. (*Id.*) But, Complainants allege Respondents’ construction of setpoint as a “predefined torque value that may or may not be reset” the “fundamental purpose” [of the setpoint] and in doing so improperly broadened “setpoint” to include any torque value, including torque values that have nothing to do with controlling the hybrid vehicle operating mode.” (*Id.* at 6.) Complainants thus allege Respondents want to make the claimed “setpoint” to a generic “any point.” (*Id.*)

In rejecting Porsche’s argument that the setpoint does not necessarily define a transition point between the operating modes Complainants aver Porsche’s reliance on hysteresis in the specification to argue that the setpoint does not trigger a mode transition is misplaced. (*Id.*) According to Complainants, hysteresis is just the lagging effect meant to prevent a system like a furnace from repeatedly turning on or off as the input if the temperature fluctuates around the setpoint and thus the addition of hysteresis merely adds a level of complexity to the transition. (*Id.*) Hysteresis does not remove the setpoint’s purpose and even if the control algorithm overrides the transition triggered by the setpoint by accounting for other criteria (like the existing charge of the battery) means the setpoint still has a purpose. (*Id.*) Complainants argue that the existence of an override has nothing to do with the purpose of the setpoint, which is to trigger a change in the mode of operation. (*Id.*) Regardless, Complainants assert the claims compare the

RL to the setpoint and control the mode of operation based on that comparison while also taking into account other criteria (e.g., the state of charge of the battery). (*Id.*)

Complainants dispute the right of Respondents to rely on the PTAB's construction and note the Supreme Court recently made clear that the PTAB operates under a different standard, giving patent claims their "broadest reasonable interpretation" and not giving claims their ordinary meaning as understood by a person of skill in the art, as set forth in *Phillips*. (*Id.*, citing *Cuozzo Speed Techs., LLC v. Lee*, 579 U.S. __ (2016).) Complainants allege that:

Use of the BRI standard frequently—and unsurprisingly—results in a broader construction for a patent term in an *inter partes* review than in a concurrent litigation:

[I]t is not surprising that constructions from IPRs and other PTO proceedings may differ from or, indeed, be diametrically opposed to those of district courts While there are conflicting interpretations from different adjudicative bodies, the interpretations stem from different standards.

Wonderland Nurserygoods Co. v. Thorley Indus., LLC, No. 12-916, 2014 WL 5325353, at *3 (W.D. Pa. Oct. 20, 2014); *see also Pragmatus AV, LLC v. Yahoo! Inc.*, No. C-13-1176, 2014 WL 1922081, at *4 (N.D. Cal. May 13, 2014) (“[T]his Court owes no deference to the PTAB’s claim construction done as part of an *inter partes* review.”); *Versata Software, Inc. v. Volusion, Inc.*, No. A-12-CA-893, 2013 WL 6912688, at *3 (W.D. Tex. June 20, 2013).

(*Id.* at 7-8.)

Finally, Complainants reiterate their argument that Respondents' construction provides no meaning to the term setpoint because a setpoint should not be limited to a "torque value." (*Id.* at 8.) Complainants thus contend Respondents' construction of setpoint as a "torque value" is gratuitous and redundant because the surrounding claim language already requires that the setpoint is a torque setpoint and the claims themselves require the setpoint to be a torque value because the road load (which is a torque value) is compared to a setpoint to effect the operating mode transition. (*Id.*) Complainants again reiterate that Respondents' addition of the word "torque" gives no meaning to setpoint that the claim does not already require.)(Id., citing *Mangosoft, Inc.*

v. Oracle Corp., 525 F.3d 1327, 1330-31 (Fed. Cir. 2008) for the general rules that claim construction ascribing no meaning to the term that is already implicit in the rest of the claim is improper.)

Complainants final point in their initial brief is to allege their construction is consistent with two district court decision construing this term and PTAB decisions interpreting it as Respondent advocate is incorrect. (CMIB at 16-17, referencing *Paice LLC v. Toyota Motor Corp.*, *et al.*, Dkt. No. 63 at 10; *Paice LLC v. Hyundai Motor Co.*, 2014 WL 3725652, at *8; *Ford Motor Company v. Paice LLC & The Abell Foundation, Inc.*, Case No. IPR2014-00571, Paper 44 at 7 (Sept. 28, 2015)) and as a “a predetermined torque value that may or may not be reset” in other IPRs (*see, e.g., Ford Motor Company v. Paice LLC & The Abell Foundation, Inc.*, Case No. IPR2014-00904, Paper 41 at 6-7 (Dec. 10, 2015).)

B. Respondents Contentions

Both Respondents filed Markman Briefs. To the extent they overlap, I will not summarize their positions separately. Instead, I will summarize Respondent Porsche’s contentions.

1) Porsche Contentions

Porsche contends a POSITA would understand that “setpoint” (SP), consistent with its plain and ordinary meaning in the context of the claims, specifications, and prosecution histories of the patents-in-suit, to mean “a predefined torque value that may or may not be reset.” (RPMIB at 9.)

Porsche avers it based its construction of the term “setpoint” on the patent claims of the patents which use “setpoint” as a torque value that a claimed algorithm compares against torque values, such as the RL “maximum torque output” (MTO) of the internal combustion engine. (*Id.*) Porsche notes that Claim 23 of the ’347 Patent provides that “employing said at least one electric motor to propel said vehicle when the torque RL required to do so is less than said lower level SP”

and “employing said engine to propel said vehicle when the torque RL required to do so is between said lower level SP and MTO. (*Id.*) Porsche contends this mean, a “setpoint” as used in the asserted claims, is just another torque value the claimed algorithm may use in determining how to operate the hybrid vehicle system. (*Id.* at 9-10.) Porsche next points out the patents describe that the “setpoint” torque value may be reset by the claimed algorithm, *i.e.*, the specifications pronounce that “[i]t is also within the scope of the invention for the microprocessor to monitor the vehicle’s operation over a period of days or weeks and reset this important setpoint in response to a repetitive driving pattern.” (*Id.* at 10.)

Porsche next argues its construction is also consistent with the Patent Office’s construction of “setpoint” in the asserted patents’ file histories and in fact, the Patent Office’s “setpoint” construction is more narrow Complainants, even under an IPR’s “broadest reasonable interpretation” standard, as the Patent Office looked to the claims, the use of the term “setpoint” within the claims, along with the specifications, to reach its conclusion. (*Id.*)

Porsche alleges Complainants’ construction of the term “setpoint” improperly broadens the “setpoint” value to units other than torque and also adds superfluous and contradictory language that does not further define the claim term: (1) violates well-established principles of claim construction; and (2) is a litigation-driven attempt to rewrite the claims and manufacture a defense to the validity challenges used in the related IPR proceedings. (*Id.*) Porsche reminds me it is improper for me to broaden or narrow claims to give the patentee something different than what he has set forth. (*Id.* at 11.)

Porsche avers Complainants’ previously attempted to broaden the claim term beyond a torque value and had their attempt rejected by the Patent Office. Porsche contends that Complainants present that same proposed construction in this Investigation. (*Id.*) Porsche asserts the Patent Office disagreed with Complainants, saying that while it “agreed with Paice that the

specification speaks of ‘setpoint’ in terms of a ‘torque output,’ a ‘state of charge of the battery,’ or a “transition point,” “the *claim language* is not so broad.” (*Id.*, referencing the ’347 File History, IPR2014-579, Paper 45, at 9 (emphasis in original)). As a result, Porsche contends the Patent Office rejected Complainants’ proposed construction for being unreasonably broad when viewed in light of the claims, noting “[a]lthough we recognize that the specification is an important tool in claim construction, it is the claim language—and the context in which the disputed term is used—that is of primary importance.” (*Id.* citing *Phillips*, 415 F.3d at 1314 for the proposition that “the claims themselves provide substantial guidance as to the meaning of particular claim terms . . . the context in which a term is used in the asserted claim can be highly instructive”) (citations omitted).) Continuing, Porsche alleges then while the USPTO was reviewing the claims, it said: “contrary to Paice’s assertion, the claim language consistently refers to a ‘setpoint’ in terms of a ‘torque’ requirement” and that “the claims instruct us that ‘setpoint,’ when read in the context of the surrounding language, is limited to a torque value . . . The claims’ “express limitations suggest that ‘setpoint’ is not just any value, but a value that—per the surrounding claim language—equates to the level of the engine’s ‘torque.’” (*Id.*, at 11-12.)

Next Porsche avers the USPTO further rejected Complainants’ argument that a “setpoint” may include a “battery state of charge” value because it is not supported by the claims. (*Id.* at 12.) Continuing, Porsche argues that even though Claim 23 includes the phrase “state of charge of said battery,” it is not connected to any “setpoint.” (*Id.*) Nor, do the dependent claims include the phrase “state of charge of the battery” connect themselves to a “setpoint,” but instead connect themselves to the term “predetermined level.” (*Id.*) This means Complainants’ attempt to argue that “setpoint” broadly encompasses values beyond torque values is not supported by the claims. (*Id.*, citing *Kara Tech. Inc. v. Stamps.com Inc.*, 582 F.3d 1341, 1348 (Fed. Cir. 2009) for the rule that claims, not specification embodiments, define the scope of patent protection because the

patentee is entitled to the full scope of the claims, and is not limited to a preferred embodiment or a limitation taken from the specification.)

Porsche next alleges that Complainants' arguments are not credible when compared with admissions they made to the USPTO that the "setpoint" term in the claims refers to a torque value. (*Id.*) Porsche avers, Complainants admitted the "setpoint" value in the claims is a torque value numerous times, including in June of this year during the consolidated oral arguments for the fourteen pending IPR petitions, to wit:

- "So it's definitely we believe that through the context of the claim, this [setpoint] has to be a torque value." Ex. 5, '347 File History, IPR2015-795, Paper 30, at 34:22-23.
- "Yes. So in the context of the claims we agree that the entire claim when read as a whole, it's clear that that's a torque setpoint." *Id.*, at 35:11-13.
- "In the context of the claim, it is clear that it is torque because you are comparing a road load to torque. As we all know, you can't compare apples and oranges. If you input your control variable as the road load is a torque, you need to compare that to a torque value." Ex. 6, '634 File History, IPR2015-785, Paper 30, at 29:10-14.
- "So in the context of the claims when read as a whole, it is clear that that set point is a torque value." *Id.*, at 33:19-20.

(*Id.* at 12-13.) Further, Porsche alleges that Dr. Hannemann, as Complainants' expert, testified in the 2015 IPR proceedings that "with or without the Board's construction, I think setpoint is a torque value." (*Id.* at 13.) The Patent Office accepted this testimony when it issued its Final Written Decisions. (*Id.*)

Porsche alleges Complainants should be held to their statements to the Patent Office that "setpoint" is a torque value. (*Id.*, citing *Aylus Networks, Inc. v. Apple Inc.*, 2016 WL 270387, *3-*7 (N.D. Cal. 2016) where the court held (patent owner's responses and statements made in IPR proceeding was "akin to a prosecution disclaimer"). Porsche maintains Complainants offer no

rationale for broadening the Patent Office's construction and thus they should be bound by it.

(*Id.*)

Porsche further alleges Complainants have improperly imported the phrase “at which a transition between operating modes may occur” into their construction of the “setpoint” term.

(*Id.*) Porsche alleges that in addition to adding unnecessary permissive language to the claim term, Complainants' attempted “importation commits ‘[o]ne of the cardinal sins of patent law [by] reading a limitation from the written description into the claims.’” *Phillips*, 415 F.3d at 1319-1320 (quoting *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1340 (Fed. Cir. 2001)); see also *Kara Tech. Inc.*, 582 F.3d at 1348.) (*Id.* at 13-14.)

Porsche alleges that as before, Complainants' proposed construction was considered and rejected by the USPTO as demonstrated by the file histories of the asserted patents. (*Id.* at 14, referencing the '347 File History, IPR2014-579, Paper 45, at 8-14.) The USPTO considered the addition of the phrase “a transition between operating modes” to be an attempt “import an extraneous limitation into the meaning of ‘setpoint’ that is neither supported by the claim language nor the specification. (*Id.*)

Porsche also avers the patents' specifications teach that the “setpoint” torque value does not *necessarily* define a transition point between the operation modes of the claimed algorithm. (*Id.*, emphasis by Porsche.) Porsche argues, the patents explain that, in a scenario where the “road load” torque value varies above and below the “setpoint” torque values, if the “engine operation were controlled solely in response to road load, the engine would be repeatedly started and shut off as the road load exceeded 30% of the MTO for a few hundred yards at a time, and then fell back below 30% of MTO.” (*Id.*, referencing the '347 Patent, 41:26–35; see also 43:50–54.) Porsche offers that repeatedly starting and stopping a combustion engine reduces efficiency and defeats the purpose of the patents, which is to provide a hybrid vehicle control algorithm to

operate a combustion engine only “under conditions of high efficiency.” (*Id.*) Thus, the goal of the claimed algorithm is to increase efficiency by waiting a certain amount of time after the setpoint is passed (in either direction) before starting or stopping the combustion engine, which is the concept of “hysteresis.” (*Id.*) Porsche offers that this is explained in the specifications as employing “fuzzy logic,” meaning the “setpoint” can “vary from time to time.” (*Id.*) Moreover, Porsche states the patents further disclose that the claimed algorithm account for additional factors or data in deciding to switch modes, such as the vehicle’s “driving patterns.” (*Id.* at 14 – 15.) Porsche summarizes by asserting “the patents do not require that a “setpoint” value define the transition between the claimed algorithm’s operating modes, but rather that the “setpoint” act as a comparison torque value for the algorithm to take into consideration.” (*Id.* at 15.)

In responding to Complainants initial brief, Porsche reiterated its argument that Complainants construction of “setpoint” improperly (i) broadens the term beyond the scope of the claims and (ii) adds a limitation from the specifications. (RPMRB at 4.) Porsche challenges Complainants for allegedly attempting to contradict “the explicit language of the claims by defining ‘setpoint’ as a general value, and not a torque value,” which is allegedly broader than what it patented. (*Id.*) Porsche also renewed its criticism of Complainants alleged importation of a “transition” limitation that allegedly reads a limitation from the written description into the claims in violation of black letter law. (*Id.* at 4-5.) Porsche also accuses Complainants’ of ignoring the IPR proceedings by failing to substantively address the ruling. (*Id.* at 5.)

Continuing its rebuttal, Porsche argues that even though Complainants clearly recognize the connection between RL and torque they inexplicably argue that “a setpoint should not be limited to a ‘torque value’.” (*Id.*) Porsche alleges that even after conceding that the words of the claims require that the “road load” torque value be compared to an equivalent “setpoint” torque value, Complainants argue using the clarifying word “torque” is “gratuitous.” (*Id.*) Moreover,

Porsche argues Complainants then create a conflict by further looking to the “specification of the asserted patents and argue that certain disclosures describe “setpoints” that are not related to torque values.” (*Id.*) Porsche asserts that Complainants’ arguments were rejected by the USPTO and thus I should include the word torque to clarify the claim term and achieve consistency with the language of the claims. (*Id.* at 5-6.) Rather than include “torque” as a “gratuitous” addition, as Complainants contend, the Court’s construction of “setpoint” should include the word “torque” to further clarify the claim term and maintain consistency with the language of the claims.

Porsche insists that even though Complainants argue inclusion of “torque” is gratuitous, Complainants do not mention their “transition” limitation was described by the USPTO as an effort to “import an *extraneous* limitation into the meaning of ‘setpoint’ that is neither supported by the claim language nor the specification.” (*Id.* at 6.) (emphasis added by Porsche) Porsche notes the USPTO said “that a ‘setpoint’ does not mean a per se transition between operating modes is reinforced by the fact that only the dependent claims [of the ’347 patent], for example, claims 3 and 10, describe the ‘setpoint’ in terms of a ‘transition’ between operating modes.” (*Id.*) Hence, Porsche argues it is improper to import this “transition” limitation from the dependent claims into the independent claims. (*Id.* at 6-7, citing to *Phillips*, 415 F.3d at 1315, for the rule that presence of a dependent claim adding a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim.)

Porsche reiterates that Complainants’ “transition” construction is a clear attempt to improperly import a limitation from the specifications into the claims. (*Id.*) Reiterating a point made in its opening brief, Porsche asserts the patents explain that, “in a scenario where the ‘road load’ torque value fluctuates above and below the ‘setpoint’ torque values, the algorithm should engage the concept of ‘hysteresis’ and prevent the algorithm from transitioning between operating modes and rapidly starting and stopping the combustion engine” and that Complainant ignores

these disclosures. (*Id.*) Hence, Porsche closes by arguing there is no reason to disagree with the USPTO's construction of "setpoint." (*Id.*)

2) VW/Audi Contentions

Neither Respondent offers a construction of the term "setpoint" differing from the other. However, VW places a slightly different emphasis on why it believes their construction is correct. (RVMRB at 9-12.)

As does Porsche, VW asserts Complainants are construing "setpoint" in a way that ignores the language of the relevant claims. (RVMRB at 9.) Again like Porsche, VW notes the claims only compare "setpoint" to torque values. (*Id.*) Yet, Complainants agree that "the claims themselves already require[] the setpoint to be a torque value because the road load (which is a torque value) is compared to a setpoint to effect the operating mode transition." (*Id.*, citing CMIB at 16.)

VW explains that Complainants construction of a "setpoint" as a value offers less meaning and extends the scope of "setpoint" beyond the torque values found in the claims. (RVMRB at 9-10.) VW follows this by distinguishing the *Mangosoft, Inc. v. Oracle Corp.* 525 F.3d 1327, 1330 (Fed. Cir. 2008) case cited by Complainants in support of the broad value meaning, by pointing out the CAFC rejected a broader construction that was inconsistent with the claim language as support for their arguments ("The district court's construction of the term 'local' is consistent with the language of claim 1. The same cannot be said for Mangosoft's position. Mangosoft's construction would read 'local' to mean something beyond the breadth of anything in the claims or the specification by giving that term attributes of control.") (*Id.* at 10.)

VW contends Complainants have improperly severed the term "set point" from the surrounding claim language when they proposing a construction not requiring the term to be limited to a torque value. (*Id.*, citing *IGT v. Bally Gaming Int'l, Inc.*, 659 F.3d 1109 (Fed. Cir.

2011), for its ruling that “Extracting a single word from a claim divorced from the surrounding limitations can lead construction astray. Claim language must be construed in the claim in which it appears.”)

Interestingly, VW also alleges Complainants’ proposed language, “at which a transition between operating modes may occur,” is redundant. (*Id.*) Noting that Complainants admit a transition may not necessarily occur at a set point, VW also points out transitions do occur as specified in the claims, which occurs under various specified conditions, *i.e.*, by comparing the road load torque value to torque values for the set point and the engine’s maximum torque output, the claims specify under what conditions a transition takes place, and there is no need to identify a set point as a value “at which a transition between operating modes may occur.” (*Id.*) Continuing, VW alleges that even though making boundaries of transitions is the purpose of defining setpoints, the USPTO ruled a transition “does not spring simply from the recitation of ‘setpoint.’” (*Id.* at 11, referring to *Ford Motor Company v. Paice LLC & The Abell Foundation, Inc.*, Case No. IPR2014-00884, Paper 38 at 9 (Dec. 10, 2015) where the UPTO refused to “import into the meaning of ‘setpoint’ an extraneous limitation that is supported by neither the claim language nor the specification”).

VW also argues the Hyundai and Toyota litigation cited by Complainants is irrelevant because the specifications disclosed that “the state of charge of the battery bank, ‘expressed as a percentage of its full charge’ is compared against setpoints, the result of the comparisons being used to control the mode of the vehicle,” and found that “a setpoint based on the battery charge status is not a torque value” while the specification in this investigation relates the setpoint to a torque value (*Id.*) VW argues that since the setpoint in the claims relevant to this investigation is limited to torque value it would be error to expand it to the state of the battery etc., and noted the USPTO refused to do so. (*Id.* at 11-12.)

2. Analysis

Even though Complainants admit the measurable variable for the “setpoint” is torque, they resist a definition that includes the word “torque” and insist using the word “torque” would be gratuitous. (CMIB at 16.) Respondents disagree and point out that the use of the word “torque” in connection with “setpoint” is a limitation provided for in both the specifications and in the claims themselves.

I note at the outset that I agree the PTAB applies a broader standard in interpreting a claim than I must. But, this necessarily acts to Complainants’ disadvantage, if it is arguing a broader interpretation than the one afforded by the PTAB. Since the definition Complainants propose is broader than what the PTAB agreed with, it can be logically argued Complainants’ proposal is too broad.

As I have already ruled and as advocated by Complainants, RL is construed as: “as the instantaneous torque required for propulsion of the vehicle, which may be positive or negative.” Hence, RL is a torque measurement.

I find the claim language in the relevant asserted claims creates an absolute connection between the concept of a setpoint and torque. First, I note that claim 33 of the ’634 patent, when discussing RL and SP together states: “operating at least one electric motor to propel the hybrid vehicle when the RL required to do so is less than a setpoint.” This claim language implicitly requires a comparison of the RL with the setpoint to determine whether the RL “is less than a setpoint.” I find the only way this limitation can be interpreted is for the setpoint to be a torque value or else, the RL (which can only be a torque value) could not be compared to the setpoint to determine whether the RL is less than the setpoint.

The next limitation in Claim 33 states:

operating an internal combustion engine of the hybrid vehicle to propel the hybrid vehicle when the RL required to do so is between the **SP** and a maximum

torque output (MTO) of the engine, wherein the engine is operable to efficiently produce torque above the *SP*, and wherein the *SP* is substantially less than the MTO

Again, the claim language establishes a relationship between torque values (maximum torque output (MTO) and RL) and SP. The explicit language of the claim requires the RL to be “between the SP and a maximum torque output (MTO),” This language implicitly requires a determination of whether the RL is between the SP and MTO. The only way such a determination could be made is if, like RL and MTO, the SP is a torque value. Moreover, the goal is to have the engine efficiently produce torque above the SP when the SP is substantially less than the MTO. Plainly, the SP must be a torque value for an engine to efficiently produce torque above the SP.

The next limitation of Claim 33 also addresses measuring torque to operate the combustion engine and the electric motor. The final limitation permits the SP to be varied based upon monitoring.

Claim 23 of the '347 patent is as torque centric as is claim 33 and I find it too only relates SP to a torque value. Although one limitation mentions using the electric motor to charge the battery, there is no connection between charging the battery and the setpoint, to wit:

Employing said engine to propel said vehicle when the torque RL required to do so is less than said lower level SP and using the torque between RL and SP to drive said at least one electric motor to charge said battery when the state of charge of said battery indicates the desirability of doing so

Interestingly, claim 21 of the '097 patent is even more torque centric in its relationship to setpoint than are claims 33 and 23. For example the last limitation provides (in pertinent part):

Employing said controller to control the engine such that a rate of increase of output torque of the engine is limited to less than said inherent maximum rate of increase of output torque, and, if the engine is incapable of supplying instantaneous torque required to propel the hybrid vehicle, supplying additional torque from at least one electric motor . . . to provide torque at least equal to SP to propel the hybrid vehicle . . .

Along with claims 33 and 23, claim 21 leads me to the inescapable conclusion that there is **nothing** in these claims that makes “torque” superfluous, gratuitous, or anything other than the critical value for determining setpoint. (emphasis added) Thus, as made clear by the language of the claims, torque is the key to construing the term setpoint. In point of fact, the concept of torque is the only thing that can give meaning to the term setpoint within the context of the relevant claims.

In examining the specification I find nothing that widens the meaning of setpoint found in the relevant claims beyond a torque value. Hence, I reject any argument that setpoint has any meaning beyond a torque value. More specifically, I agree with Respondents that Complainants cannot import something allegedly anticipated by the specification (*e.g.*, '347 Patent at 40:22-31) as a claim requirement when the claim does not even contemplate it.

Moreover, Complainant has misapplied the text it argues from the '347 patent in its brief. (CMIB at 16)¹. The specification merely compares the state of charge of the battery bank against the setpoints. Thus, I specifically find there is not even a hint that this specification affects how the setpoint is calculated. Rather, the setpoint remains a torque value.

I agree that a setpoint value may be a transition point. But, the claims are devoid of any requirement for the setpoint to always be a transition point. Instead, what is undisputed and is also certainly true, is that a setpoint torque value may be a transition value and it may be reset.

¹ As quoted by the Complainants: [T]he microprocessor tests sensed and calculated values for system variables, such as the vehicle's instantaneous torque requirement, i.e., the “road load” RL, the engine's instantaneous torque output ITO, both being expressed as a percentage of the engine's maximum torque output MTO, ***and the state of charge of the battery bank BSC, expressed as a percentage of its full charge, against setpoints, and uses the results of the comparisons to control the mode of vehicle operation.*** (emphasis by Complainants)

I also disagree with Complainant's assertion that the patentee acted as its own lexicographer for setpoint in the '347 patent at 40:47-55. (CMRB at 5.) The relevant part of the specification cited by Complainant reads:

For example, in the example of the inventive control strategy discussed above, it is repeatedly stated that the transition from low-speed operation to highway cruising occurs when road load is equal to 30% of MTO. This setpoint, referred to in the appended claims as "SP", and sometimes hereinafter as the transition point (i.e., between operation in modes I and IV) is obviously arbitrary and can vary substantially, e.g., between 30-50% of MTO, within the scope of the invention.

My reading of this language is that it applies to one specific example in the first instance and not to setpoints generally. In any event, it is actually the most minor of points, for the setpoint is still a torque centric concept and it will be subject to resetting, whether it serves as a transition point or not. I find the addition of transition point to the end of the construction as Complainant proposes actually would be superfluous and probably confusing, because it adds nothing to the term setpoint not better said in Respondents' construction.

One thing that troubles me is that it appears Complainants seek more out of their own proposed construction than should be gleaned from its actual text. Specifically, by calling the setpoint a potentially variable value, Complainants have sought to import other values than torque in a strange place. What I see is that, for reasons best known to themselves, Complainants have conflated the limitation that the torque value of the setpoint may be reset with an argument that the value of the setpoint may be reset to something other than torque. If Complainants actually were to concur the value of the setpoint must always be valued in terms of torque, which is perhaps a fair reading of their proposed construction, then there would be less of a problem. Regardless, the solution here is simple-- the claims leave no doubt that the term setpoint must be expressed as a torque value.

In consideration of the foregoing, I find the Respondent's proposed construction of the term setpoint is correct. Thus, I find one of ordinary skill in the art at the time of the invention would construe the term setpoint to be "a pre-defined torque value that may or may not be reset."

C. Remaining Claim Terms

As I explained during the Markman Hearing, I will not be construing the ten remaining disputed terms. For those ten terms, Complainants argue I should afford them their plain meaning and Respondents argue I should find them indefinite. In support of their arguments both parties provided declarations from purported experts that disputed whether the terms at issue had a plain and ordinary meaning to a person of skill in the art.

As I explained, I cannot resolve of this matter in a claims construction order. As we all know, a Markman Order construing claims is not a reviewable or appealable Initial Determination. Short of an Initial Determination after a hearing on the merits, resolution of the issue of indefiniteness can only be accomplished by a ruling subsequent to a Motion for Summary Determination, which would again raise the issue of crossing declarations and my obligation to give the benefit of the doubt to the non-moving party. Hence, no useful purpose will be served in construing at this time the ten terms Respondents claim are indefinite.

SO ORDERED.




Thomas B. Pender
Administrative Law Judge

**IN THE MATTER OF CERTAIN HYBRID ELECTRIC
VEHICLES AND COMPONENTS THEREOF**

337-TA-998

CERTIFICATE OF SERVICE

I, Lisa R. Barton, hereby certify that the attached **PUBLIC ORDER NO. 08** has been served upon the following parties as indicated on OCT 06 2016.


Lisa R. Barton, Secretary
U.S. International Trade Commission
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Washington, DC 20436

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