

Hearing:  
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Bucher

**UNITED STATES PATENT AND TRADEMARK OFFICE**

**Trademark Trial and Appeal Board**

The Goodyear Tire & Rubber Company

v.

Continental General Tire, Inc.

Opposition No. 91/118,372  
to application Serial No. 75/745,727

Albert Robin, Howard B. Barnaby and Ned W. Branthover of Robin Blecker & Daley for The Goodyear Tire & Rubber Company.

Raymond Rundelli and S. Paige Christopher of Calfee Halter & Griswold, LLP for Continental General Tire, Inc.

Before Simms, Hohein and Bucher, Administrative Trademark Judges.

Opinion by Bucher, Administrative Trademark Judge:

Continental General Tire, Inc. has filed an application to register the mark INTELLIGENT for "tires" in Class 12.<sup>1</sup>

The Goodyear Tire & Rubber Company has opposed registration on the ground that "INTELLIGENT is merely descriptive of any automobile component, including tires, containing sensor devices that transmit information concerning condition and performance or are part of a system that conveys

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<sup>1</sup> Application Serial No. 75/745,727 was filed on July 8, 1999 based upon applicant's allegation of a *bona fide* intention to use the mark in commerce.

such information." Opposer argues that all tire manufacturers "should be free to use 'intelligent' to describe their own tires containing sensor devices that transmit information concerning condition and performance or are part of a system that conveys such information." (Amended Notice of Opposition, ¶¶ 11 & 12). Continuing, opposer alleged that it is involved in the manufacture, advertising, offering for sale and sale of tires, and that the issuance of a registration to applicant for the term INTELLIGENT would interfere with opposer's continued right to use this descriptive term.<sup>2</sup>

Applicant, in its amended answer, has denied the salient allegations of the amended notice of opposition, stating that its "INTELLIGENT mark is inherently distinctive for tires" which "do not contain sensor devices that transmit information nor are they part of a system that does so." (Amended Answer to Notice of Opposition, pp. 5 and 6).

The record consists of the file of the opposed application; and, as opposer's case-in-chief, the trial testimony of Brian M. Logan, opposer's principal engineer in radial medium truck tire development, the trial testimony of

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<sup>2</sup> In its amended complaint, opposer also pled, as an alternative ground, that in the event the term "Intelligent," when used with tires, requires a microprocessor in the tire to be found to be merely descriptive, but that applicant's tires will not contain such a device, that in such case, the term should be found to be deceptively misdescriptive as used by applicant. In light of our determination herein, we find this issue to be moot.

Janice J. Consolacion, opposer's product manager for commercial tire marketing, the trial testimony of John D. Rensel, Bridgestone/Firestone's research section manager, the trial testimony of Patrick T. Hicks, manager of Michelin's MEM System, the trial testimony of Dr. Marvin Cetron, a scientist and author specializing in forecasting, and certain exhibits introduced during the trial testimony of these various witnesses; stipulations as to the testimony of Roberta Kraus and as to the authenticity of various discovery documents; and opposer's first notice of reliance on magazine articles.

Applicant took no testimony during its testimony period but submitted a notice of reliance on dictionary definitions and designated portions of the discovery deposition of Kenneth C. Williams, opposer's in-house counsel, and the entire discovery deposition of Brian M. Logan, with exhibits. As rebuttal, opposer filed a second notice of reliance on additional pages from the deposition of opposer's counsel, Kenneth C. Williams.

Continental General Tire, Inc. ("Applicant") manufactures tires. Press releases and published articles report that in addition to tires, Continental's family of companies also has extensive involvement in the design and manufacturing of electronic components and automobile brakes. These documents report that applicant's main focus of development work on the "Intelligent" tire is the Sidewall Tension (SWT) sensor

system. The sidewall of the tire is magnetized. This magnetic field and any change in the field can be measured directly on the wheel by means of sensors. In braking, accelerating or cornering maneuvers, the forces prevailing between the tire and the road deform the sidewall. The tire technology developed by applicant senses changes in the shape of the tire sidewall during such maneuvers, and relays this information to vehicle regulator systems. In these documents, applicant's spokespersons claim that the immediate availability of this data renders the monitoring and control of driving dynamics simpler and more reliable, providing a greater margin of safety for drivers.

According to the record herein, Goodyear Tire & Rubber ("opposer") is the largest tire manufacturer in the world.<sup>3</sup> Goodyear manufactures and sells many types of tires, including tires for, *inter alia*, passenger cars, light trucks, tractor-trailer trucks and off-the-road earthmoving equipment.<sup>4</sup>

Over the past decade, applicant, opposer, and their major competitors have been involved in research and development into tires having enhanced features that are able to share information with the vehicle driver.<sup>5</sup> Several witnesses called

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<sup>3</sup> Trial Testimony of Brian K. Logan, July 25, 2001, p. 4.

<sup>4</sup> Trial Testimony of Brian K. Logan, July 25, 2001, p. 5; and Trial Testimony of Janice J. Consolacion, July 25, 2001, pp. 6 - 7.

<sup>5</sup> Trial Testimony of Brian K. Logan, July 25, 2001, pp. 8 - 42; and Trial Testimony of Janice J. Consolacion, July 25, 2001, pp. 7 - 8.

by opposer have testified to their knowledge of the term "intelligent tire" being used to describe a variety of sizes and types of tires researched and developed by opposer and several other tire companies for more than a decade.<sup>6</sup>

Applicant argues that the word "Intelligent," in the context of tires, may well be suggestive of tires having advanced technical capabilities, but could also provide the average prospective purchaser of tires with any number of laudatory suggestions such as an intelligent purchasing decision, a tire designed by an intelligent person, a well-designed tire, a good process for fabricating the tire, a tire that could adapt to changing conditions, a tire having good components or raw materials, etc. Applicant argues that the "candid admissions" of opposer's own witnesses during cross-examination demonstrate the plausibility of these alternative interpretations. Furthermore, applicant argues that all these other plausible meanings of the word "intelligent" would not be found to be merely descriptive.

The parties have fully briefed the case and both parties appeared at an oral hearing before the Board.

We sustain the opposition.

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<sup>6</sup> *Id.*; Trial Testimony of Janice J. Consolacion, July 25, 2001, pp. 8 - 26; and Trial Testimony of Patrick T. Hicks, July 24, 2001, pp. 9 - 46.

Before tackling the main issue before us, we turn briefly to applicant's objection to the testimony of Dr. Marvin J. Cetron, arguing that he does not have the required type of "knowledge, skill, experience, training or education" to testify as an expert on the merely descriptive issue before this Board.

Although we find that Dr. Cetron's knowledge and experience as a scientist and industrial engineer would make him competent to testify about trends in advanced materials, technology development and intelligent systems generally, we find that Dr. Cetron is not an expert in the design and manufacturing of vehicle tires. Hence, while his testimony and supporting documents are generally consistent with the other articles and testimony in this case, we agree with applicant that Dr. Cetron's testimony is to be disregarded on the ultimate question of whether the word "intelligent" is descriptive of tires.

We turn then to the only substantive issue in this case - a consideration of whether opposer has established by a preponderance of the evidence that the term INTELLIGENT is merely descriptive of tires.

As has been stated repeatedly, "a term is merely descriptive if it forthwith conveys an immediate idea of the ingredients, qualities or characteristics of the goods." In

re Abcor Development Corp., 588 F.2d 811, 200 USPQ 215, 218 (CCPA 1978); and Abercrombie & Fitch Co. v. Hunting World, Inc., 537 F.2d 4, 189 USPQ 759, 765 (2<sup>nd</sup> Cir. 1976). Moreover, the immediate idea must be conveyed forthwith with a "degree of particularity." In re TMS Corp. of the Americas, 200 USPQ 57, 59 (TTAB 1978); and In re Entenmann's Inc., 15 USPQ2d 1750, 1751 (TTAB 1990), *aff'd* 90-1495 (Fed. Cir. 1991).

The dictionary definitions made part of this record reflect the evolution of the word "intelligent." The first several definitions contained in each dictionary entry demonstrate the original meaning of the word "intelligent" as referring to the mental capacity of sensate creatures such as humans.<sup>7</sup>

In the computer age, this word has also been applied to the ability of inanimate devices to store and process information. In the early stages of computerization, this often involved a heretofore "dumb" device that had been retrofitted with a built-in, microprocessing component. However, as interactive capabilities depending upon innovative, third-millennium technologies are integrated into larger systems, the transition from "dumb" objects to "intelligent" (or "smart") devices is not as simple as the mere insertion of a single computer chip. Rather, analogizing

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<sup>7</sup> Stipulated Documents 19 and 20.

to the complexity of a "nerve" (or neural network), the inquiry should focus on whether the named device is a significant part of a larger system having the ability to sense a condition and carry information about it to the world outside the device.<sup>8</sup>

Accordingly, we find that the entries for the word "intelligent" taken from the most recently published dictionaries comport with this nuanced change in the connotation of the word. There is less emphasis on the presence of a specific component, like a microprocessor. Rather, these entries focus more on the resulting capabilities or functionalities of the system. For example, The New Oxford American Dictionary of 2001 contains the following entry:

**Intelligent:** ...  
?(of a device, machine, or building) able to vary its state or action in response to varying situations, varying requirements, and past experience ...

And contrary to the argument made by applicant, we do not hold it against opposer's position that none of the dictionary entries in this record for the word "intelligent" contains a reference to the meaning of the word in the specific context of vehicle tires.

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<sup>8</sup> Probable Tomorrows: How Science and Technology Will Transform Our Lives in the Next Twenty Years, by Marvin Cetron and Owen Davies, 1997, pp 70 - 74; and Trial Testimony of Dr. Marvin J. Cetron, August 7, 2001, pp. 20 - 24.

In support of its position herein, applicant cites to In re Intelligent Medical Systems Inc., 5 USPQ2d 1674, 1676 (TTAB 1987). In that case, the Board held that INTELLIGENT MEDICAL SYSTEMS was not merely descriptive of a thermometer with an electronic processor. That *ex parte* record contained no evidence that the word "intelligent" had any meaning when applied to electronic thermometers. However, we note that when facing a question of descriptiveness in the *ex parte* context such as Intelligent Medical, the Board must resolve any doubt in favor of publication. However, in the present *inter partes* context, where two party litigants have placed evidence in the record, we apply a different standard to the evidence of record. Specifically, we must determine whether opposer's position is supported by a preponderance of the evidence.

Further, we note that the words "intelligent" and "smart" are used interchangeably in naming devices having enhanced capabilities.<sup>9</sup> Accordingly, when reviewing precedential cases from the Board, we find In re Cryomedical Sciences Inc., 32

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<sup>9</sup> We take judicial notice of dictionary entries:

**Smart:** "A synonym for *intelligent*" Microsoft Press Computer Dictionary (5<sup>th</sup> ed. 2002)

**Smart:** "17. *Informal*. equipped with, using, or containing electronic control devices, as computer systems, microprocessors, or missiles: a *smart phone*; a *smart copier*. 18. *Computers*. intelligent." Random House Dictionary (2<sup>nd</sup> ed. 1987).

USPQ2d 1377 (TTAB 1994) [the term SMARTPROBE as applied to probes having electronic components] to be helpful to our current analysis. This later *ex parte* record, also concerning medical devices, contained sufficient evidence to demonstrate that the term "smart" has a readily understood meaning in the medical devices field.

What we draw from these decisions is yet another reminder that each case must be decided on the factual evidence placed into the record in that particular case, and that the intent of Section 2(e)(1) is to protect the competitive needs of others, namely, that "descriptive words must be left free for public use." *In re Colonial Stores, Inc.*, 394 F.2d 549, 157 USPQ 382, 383 (CCPA 1968).

Whether noting the ancient etymologies of the word "intelligent" and recent evolutions of its meaning, or reviewing the wealth of often technical information contained in the voluminous record of this proceeding, it is clear that "intelligent" materials, devices and/or systems increasingly respond to their environment in a way that is more reminiscent of living organisms than of inanimate objects.

The Internet articles in this record from recent years demonstrate the remarkable strides of technology in bringing

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Additionally, see *infra*, pages 18-22, for a discussion of press releases and articles on applicant's tires that utilize both "smart" and "intelligent" in reference to such goods.

ever more intelligent components into many fields, including that of motorized vehicles. For example, opposer has compiled examples of descriptive uses of the word "intelligent" for a range of component parts fabricated by major automotive parts manufacturers. These range from airbags to car seats, from antilock braking systems to truck bodies.<sup>10</sup>

While these descriptive uses on other automotive components are instructive, the goods of the present application are simply "tires." And historically, vehicle tires were the crudest of commodities. For much of the past century, these round, rubber points of contact with the road were mounted onto appropriately-sized wheels that were in turn attached with lug nuts to the vehicle's axles. In short, they typified the very dumbest of devices.

By contrast, over the past decade, all the major tire manufacturers have been racing to develop tires that will be integrated components of "corner modules" of the vehicle.<sup>11</sup> At the time the evidence in this case was collected, the most frequent examples of actual "smart" tires being deployed were still limited to large off-the-road mining vehicles, fighter planes and tractor-trailer fleets. Yet, all the literature in

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<sup>10</sup> Stipulated Testimony of Roberta Kraus, Exhibits B and C.

<sup>11</sup> The record reflects the fact that a large group of automotive suppliers (e.g., Bosch, Cycloid, Delphi, Goodyear, Lear, Motorola, Schrader Electronics, Siemens, SmartTire Systems, TRW, *et al.*) are working feverishly on tire monitoring and other smart tire technologies.

this record suggests that within the next several years, such enhanced tire systems will move beyond field testing of tires on heavy vehicles and limited availability on high-end automobiles, and should soon be widely available on entry- and mid-level passenger cars and small trucks.

The totality of the record shows that the fast pace of this innovation over the past decade is a function of new approaches, breakthrough technologies and highly integrated power circuits resulting in reliable systems at prices that consumers will find increasingly reasonable. Goodyear, Continental, and the other large tire manufacturers clearly believe that increasingly safety-conscious consumers will want this technology, and they are sure that rising volumes will lower costs. Moreover, tire pressure monitoring has been given a strong impetus by legislative reactions to the Bridgestone/Firestone tire tread separations allegedly causing a spate of deadly rollover accidents involving Ford Explorer sport utility vehicles.<sup>12</sup>

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<sup>12</sup> "Prompted by the legal chaos resulting from accidents involving Ford Explorers using Firestone tires, in November Congress passed the 2000 Transportation Recall Enhancement, Accountability, and Documentation (TREAD) Act. The law requires tire pressure monitors to come standard on all passenger cars sold in the United States beginning with the 2004 model year.

"The Transportation Recall Enhancement, Accountability and Documentation Act requires that effective November 2003, all new vehicles, beginning with the 2004 model year, have a system to alert the driver to low air pressure in one or more tires."

"Firestone Recall Fuels Interest in "Smart Tires," by Timothy Aepfel, Wall Street Journal, November 22, 2000.

While Goodyear, Continental and all their major competitors are each hoping to make the big breakthrough in smart tires, most are still at the research and development stage of in-vehicle tire sensors, or they have initiated limited field tests of prototype devices. We examine briefly the activities of the major players in the field of tire manufacturing, as reflected in testimony and articles made a part of the instant record:

Nokian: In a press release from 2000, Finnish tire maker Nokian Renkaat claimed it had developed an "intelligent" car tire where the driver receives a real-time mobile phone message from the wheels.<sup>13</sup>

Michelin: The record has numerous references to tire manufacturer Michelin's having provided the mining industry's first fully functional, electronic tire monitoring system for

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"Clemson University Tire Industry Conference: A race against time," April 9, 2001, [www.rubbernews.com](http://www.rubbernews.com)

<sup>13</sup> Nokian Tyres says it has developed an intelligent tire technology that updates users on tire and wheel conditions via a driver's mobile phone.

The Finnish company says that the system uses Bluetooth technology to send real-time data such as tire pressures to the driver's mobile phone. The company said the system doesn't require the installation of extra equipment in the vehicle.

Nokian Tyres says that it has applied for a patent for the system. The system uses an intelligent chip in the tire to measure air pressure and tire temperature. The chip transmits that data to the driver's Bluetooth-enabled phone.

Later, the company will extend the monitored information to include how much the tire is aquaplaning on wet surfaces and to monitor tire wear and even provide anti-theft protection.

The company says it plans to start selling the system in 2001. It will focus its efforts first on trucks and on high-performance passenger tires.

[http://www.allnetdevices.com/wireless/news/2000/10/23/smart\\_tire.html](http://www.allnetdevices.com/wireless/news/2000/10/23/smart_tire.html)

off-the-road vehicles such as large earthmovers. This is a four-component system featuring tire tags, a receiver, an interface with the mine management system and a handheld unit. The tag, located in the air chamber of the tire, contains a sensor and electronics to monitor inflation pressure and internal temperature. The tags transmit real-time information to the receiver, which continually sends the information to the operations control center. The handheld unit is used to monitor tires in service, conduct inspections and store data for future downloading into a PC for analysis and record keeping.<sup>14</sup>

Goodyear: The record also shows that Goodyear, the opposer herein, similar to Michelin's efforts, has been working with intelligent transponders placed into the tires of heavy trucks, construction, quarry and other off-the-road vehicles, jet fighters,<sup>15</sup> etc. In on-going field tests,

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<sup>14</sup> **Michelin Develops Chip Technology for Earthmover Tires**  
Michelin's "New Technology Update," March 1998

**MEMS**

**(Michelin Earthmover Management System)**

... Utilizing the latest developments in microelectronics, MEMS is an "intelligent tire" management system which is designed to provide operators, service personnel and managers with up to the minute information critical to the optimization of tire and vehicle performance.

By continuously monitoring inflation pressure and chamber temperature, MEMS can recommend immediate corrective action for any tire parameter found out of spec. And MEMS not only monitors these vital tire parameters, it stores the information for future analysis...

<sup>15</sup> **Lockheed Martin & Goodyear Develop Intelligent Tires for Joint Strike Fighter** (Press Release)

Fort Worth, Texas, April 1, 1999 - Through the efforts of The Goodyear Tire & Rubber Company and Lockheed Martin Tactical Aircraft

Goodyear's lightweight tire sensor is fastened to the tire inner liner, where it measures cavity temperature and pressure and transmits data every three minutes.<sup>16</sup> According to trial testimony taken in this case and various articles of public record, building on the work it has been doing since the

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Systems, U.S. and British military aircraft are getting a little smarter.

Goodyear is producing and supplying prototype "Intelligent Tires" for Lockheed Martin's Joint Strike Force (JSF) program, the next-generation multirole, multiservice fighter for the 21<sup>st</sup> Century... **Intelligent Aircraft Tires**, a PowerPoint presentation by Brian J. Logan in the Fall of 1998 to aircraft industry symposium.

<sup>16</sup> "Micromachines - The Next Big Thing," Technology Review, September-October 1999;

#### **Goodyear tires wired for data**

Goodyear has introduced an intelligent tire system to help control tire costs and lower downtime due to tire issues in mining operations. The company originally introduced the development during MINExpo 2000, which featured a live data feed of the system in use at the Fording River mine in Elkford, BC, Canada.

Goodyear equipped a 218-t (240-ton) truck with the intelligent tire system on 40.00R57 tires. Each of the truck's six tires was fitted with an intelligent transponder to record tire temperature and pressure. The data was logged through a mine-management system from Modular Mining Systems at the mine and downloaded via software at Goodyear's MINExpo exhibit, where it was displayed graphically.

"The 7.6-cm (3-in) diameter, 3.3-cm (1.3-in) thick, lightweight intelligent tire sensor, about the size of a hockey puck, is fastened to the tire inner-liner, where it measures cavity temperature and pressure and transmits data every three minutes," said Goodyear OTR Engineer Darrin Landes.

An in-cab receiver, which can be programmed with each tire's identification and the truck number, logs data. It sends the data "upstream" to the mine-management system unit in the cab.

Based on the mine's preference, the data can then be viewed at mine dispatch, downloaded into a laptop computer, or viewed in the truck. The system is compatible with Modular Mining's mine-management system.

"Operators can now see, on a real-time basis, which tires are getting hot and adjust routes accordingly," Landes said. "This is the most significant benefit of the system since excessive heat is a tire's worst enemy."

An optional, in-cab receiver/display unit that displays temperature and pressure can be programmed with each tire position and functions like a stand-alone receiver. Goodyear field engineers and mine managers placed more than 250 transponders in service last year.

early- to mid-1990's,<sup>17</sup> Goodyear continues to work on the next generation of passive tire monitoring<sup>18</sup> and display systems for passenger vehicles (e.g., low pressure warning systems) to be targeted to the automakers.<sup>19</sup> This has involved meetings to seek standards among tire makers for various tags (e.g., for the off-the-road industry)<sup>20</sup> as well as developing a series of strategic relationships with a number of other companies to design the vital components of its smart tire.<sup>21</sup>

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The previous Technology Review article on Micromachines tracks very closely a public affairs press release entitled "Goodyear Introduces 'Intelligent Tire System'," dated October 9, 2000.

<sup>17</sup> See Discovery Deposition of Brian K. Logan, November 30, 2000, pp. 14 - 16 [Mr. Logan discusses his personal involvement beginning in 1995 with Goodyear's efforts to design the intelligent tire].

<sup>18</sup> "Passive" is not at all synonymous with "dumb" in the context of Goodyear's presentations of intelligent tire technologies. Rather, unlike a transponder that is partly or completely battery-powered, "passive tag" is used to mean that the embedded RF transponder itself does not contain any internal power source. Rather, it is powered by signals from an external source (e.g., the electro-magnetic field generated by the reader antenna), and it reflects RF energy back to the reader in the form of encoded data. The reader (scanner) becomes both communications device and energy supply for tags. No battery is required to read data that has been stored on the RF tag. See, e.g., field Diagram and associated pages of Goodyear presentations by Brian J. Logan of November 1997 to the Society of Automotive Engineers Truck and Bus Show in Cleveland, OH.

<sup>19</sup> [www.goodyearotr.com](http://www.goodyearotr.com)

<sup>20</sup> For example, through working groups of the Automotive Industry Action Group's (AIAG) on tire and wheel labels and radio frequency identification (RFID) standards. See Discovery Deposition of Brian K. Logan, November 30, 2000, pp. 58 - 61 [Mr. Logan discusses Goodyear's having proposed such standards in May 1997 at a time when none of its competitors had done so].

<sup>21</sup> **Goodyear Moves Toward Tire Pressure Monitoring System**

Goodyear has forged another agreement aimed at fully developing a tire pressure monitoring system. The latest pact is with Phase IV Engineering, Inc. of Boulder, Colorado, a developer of custom radio frequency identification (RFID) and radio telemetry systems.

Goodyear has acquired a 20 percent equity interest in Phase IV and the two companies will continue to develop tire pressure monitoring technology. Last week Goodyear announced an "intelligent" tire system that monitors and reports tire pressure and temperature

Continental: Finally, in our review of the literature submitted for this record, we look at the information about applicant's efforts in recent years to take the lead in the industry to develop the "Intelligent" tire. While it is not clear that Continental has a firm production program for its "Intelligent" tires, it continues to pursue a myriad of patents relying upon sophisticated technological systems having at their core magnetized bands in the tire sidewall.<sup>22</sup>

We note that applicant's own press releases contain uses of the term "intelligent" that would clearly not be perceived as trademark references. Additionally, to the extent that various reporters writing newspaper and magazine articles about applicant's emerging tire technology use the term "intelligent," these instances are certainly probative of just how effectively (or ineffectively) applicant has conveyed this term as a source indicator. It is also instructive to notice in press releases and in published articles about Continental's technology developments that the terms "smart tire" and "intelligent tire" are used interchangeably to

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for tires on large haul trucks used in mining and other off-highway, heavy-duty applications. That product, also developed with Phase IV, is the only commercially available system.

<sup>22</sup> U.S. Patent No. 5,926,017, Hubertus Von Grunberg, *et al.*, granted on July 20, 1999, "Device for measuring the rotary frequency of a rotating vehicle wheel and vehicle tire for use in the device"

... SUMMARY OF THE INVENTION

... The inventive device furthermore comprises a computing or processing unit ...

describe a significant feature or function of applicant's advanced tire system.

**A Golden Opportunity: Continental eyes 'intelligent tire' with ITTA brakes**

...  
The Continental deal adds an interesting twist. The German company is principally a tire maker -- the fourth largest in the world -- and now it will have the unique ability to integrate brakes with the tire and wheel assemblies it already supplies to automakers.

"We're just trying to change the playing field. There is no combination out there of tire and brake components like this one," says Bernd Frangenberg, president and CEO of U.S.-based Continental General Tire, a division of Continental AG.

"This is a golden opportunity that happens once in a lifetime," Mr. Frangenberg says. "Our OEM customers really can relate to our vision and relate to what we are doing. They are very receptive to our ambitious and audacious strategy. The work only starts now."

That work will focus on development of an "intelligent tire," with sidewall sensors -- from ITTA -- to transmit messages about side loading and traction more quickly to chassis control systems such as antilock brakes, traction control and vehicle stability management.

Traditional ABS systems require expensive yaw sensors fitted underbody, but Mr. Frangenberg suggests the sensors could be unnecessary if the information is gathered "where the rubber meets the road."<sup>23</sup>

"We believe we can come up with a better system in terms of quality and reaction time and a system that is at least cheaper than what is offered today," he says...

by Tom Murphy, Ward's Auto World, Oct 1, 1998, p. 65.

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**Continental Rolls into Modular Supply: The German tire maker looks to redefine "corner module," supplying smart tires, suspensions and stability control.**

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<sup>23</sup> By contrast, opposer's RF tags currently in use supply the driver with information limited to tire pressure, etc. Hence, at this time, Goodyear's transponder does not seem to be designed to replace other stability control sensors.

As suppliers around the world reshape themselves as developers and manufacturer of systems and modules, German tire maker Continental AG has set out on an intriguing new course. While companies from Delphi to Dana look optimistically to the "corner module," a sophisticated unit encompassing brakes and suspension, Continental has take the concept a step further, offering to add advanced tires and wheels.

It's an ambitious plan, and there's no telling if automakers will accept it or if Continental can fill the expanded role to which it aspires. However, the new idea arrives at a time when the industry appears open to innovation and Continental may end up with a unique portfolio.

...  
[Bernd Frangenberg, president and CEO of Continental General] promises the intelligent tire provides more accurate, timely and detailed information for a stability control system, while offering lower costs by eliminating the expensive yaw sensor. "We can now interface with ITT's ABS, ESP, traction control," he says.

That kind of out-of-the-box thinking is the key to the acquisition and to Continental's success, says Donna Parolini, president of supplier consultant IBD Corp, in Troy, Mich. "It's a great idea, she says. "ITT has shown it can produce the high-volume versions of ABS and stability control, and Continental has the opportunity to demonstrate synergies no one else in the business can offer."

...  
"Continental Rolls into Modular Supply," AI magazine, October 1998, p. 117.

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**Continental aims to integrate tire into suspension, braking systems**

Continental General Tire Inc. has taken the wraps off technologies its executives expect will propel the company to leadership in tire, wheel and car suspension supply in coming years.

Continental's developments, packaged together in the "intelligent tire," are designed to integrate the tire and wheel further into a vehicle's suspension, braking and drive train systems. That will allow car designers to optimize technologies like anti-lock braking, traction control systems, and/or active suspension, company spokesmen said.

The Company showed off the product at its booth during the Tire Association of North Americas exhibition ...

The result could be measurable reductions in braking distances, enhanced traction in wet or wintry conditions,

or even increased tread life, according to Jim Guistino, senior research associate for Continental General.

The primary development is the Sidewall Torsion Sensor System, a concept that turns the tire into a torsion-monitoring device essentially by magnetizing the tire's sidewalls to allow vehicle mounted sensors to record sidewall deformation as the vehicle moves. ...

"Automotive Aftermarket Industry Week -- Las Vegas: Continental aims to integrate tire into suspension, braking systems," by Bruce Davis, Rubber and Plastics News II, November 23, 1998, p. 6.<sup>24</sup>

\* \* \* \* \*

**Continental General Tire Touts "Intelligent Tire" Sidewall Torsion Sensor System (SWT) Helps Redefine the Role of the Tire**

[Press release from] Charlotte, N.C. - February 25, 1999 - Continental General Tire Inc. believes its latest innovation - the Intelligent Tire™ -- not only improves vehicle performance and driver satisfaction but also transforms a tire into a vehicle communication system. The company believes this technology will radically change and redefine the role of the tire over the next few years.

...

"Considering the tire an information provider transforms the traditional role of the tire," said Jim Giustino, senior research associate for Continental General Tire. "The intelligent tire is perhaps as revolutionary as radialization."

...

"The Intelligent Tire will change the role of the tire as it becomes an integral part of the vehicle chassis system," said Giustino. "It embodies Continental General Tier's systems approach to tire making."

...

Continental General Tire press release of February 25, 1999, pp. 1, 2.

\* \* \* \* \*

**Dealer Group to review new technology**

... CBT and its German parent, Continental A.G., recently announced several new tire concepts, which are in various stages of development.

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<sup>24</sup> This article is also quite similar to another article of record written by the same author entitled **CGT debuts "Smart" Tire at TANA show** [Tire Association of North America's International Tire Expo, Nov. 3-6 in Las Vegas], "Tire Business, November 9, 1998, p. 1.

Two of these are run-flat designs, while the third is a corporate effort to re-define the role of the tire, making it a vehicle systems component.

This last technology would, in effect, create an intelligent tire, Mr. [Chris] Dickson [vice president of sales and marketing for CGT's replacement passenger and light truck tire group] said ...

By Dave Zielasko, Tire Business, March 29, 1999, p. 21.

\* \* \* \* \*

Auburn Hills, Michigan, August 24, 1999 - Continental Teves is giving new meaning to keeping the car on the road while contributing to the comfort and safety of motorists. The company's innovative engineering group is progressing with development to move the "Intelligent Tire" from the laboratory to the street.

Continental's development of the "Intelligent Tire" is a revolutionary approach to help the driver handle the dynamics of a vehicle.

With many vehicle control systems on today's (and tomorrow's) cars and trucks, drivers can benefit from know [sic] the forces acting between the tire and the road. There are several costly and complex ways to measure these forces. However, Continental's "Intelligent Tire" system can determine them simply and inexpensively for cars and trucks. Continental Teves is working on integrating this breakthrough tire technology with electronic chassis control systems.

...

Following extensive patent application activity, the development team is now involved in an accelerated effort to introduce the system into series production. In the future, the integration of the "intelligent tire" into vehicle stability systems will contribute to a further increase in safety on our roads.

<http://www.contitevesna.com/0824992.htm>

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**Smart Tires--Look for new sidewall torsion sensors in an '02 model**

Continental AG plans to consummate the marriage of tires and technology early next decade with the debut of its "intelligent tire," the first technology to determine the longitudinal and lateral forces acting on a tire - and translate that information into meaningful vehicle-dynamics enhancement.

The Frankfurt, Germany-based company says its sidewall torsion (SWT) sensor, the primary component of the intelligent tire system because it measures the forces

at work between the tire and the road surface, should debut on a production vehicle within the '02-'05 model years. It is estimated that the technology likely will debut on a German automaker's product, probably in Europe, where Continental records 64% of its revenue. ... "Smart Tires--Look for new sidewall torsion sensors in an '02 model," by Brian Corbett, Ward's Auto World, Nov 1, 1999, p. 86.

In our earlier discussion of the standard to be employed herein, we concluded that the term "Intelligent" is merely descriptive if the record shows, by a preponderance of the evidence, that it conveys to relevant consumers with the requisite particularity an immediate idea of a characteristic of tires. In re Nett Designs, 236 F.3d 1339, 57 USPQ2d 1564 (Fed. Cir. 2001); In re Abcor Development Corp., *supra*; In re Entenmann's Inc., *supra*; and In re TMS Corp., *supra*.

The alleged trademark under consideration herein is the single word INTELLIGENT. Applicant argues that the relevant purchasers would think of other possible meanings of the word "intelligent" (e.g., design or purchasing decision, etc.). Yet we find on this record that applicant makes this argument in a vacuum, without regard to the relationship of the mark to the identified goods in the real world marketplace. We, however, cannot consider the applied-for-mark in a vacuum. While there are indeed alternate interpretations of the mark that potential consumers might hold in the abstract, as applied to applicant's goods, applicant has not shown that any non-descriptive interpretation is more likely to be held by

consumers than the straightforward interpretation which is that the tires have advanced capabilities.<sup>25</sup>

With regard to applicant's argument that "intelligent" may be interpreted in the traditional sense as a "good buy," we note at the outset that this is certainly less likely than would be the case with other theoretical composite marks containing the word "Intelligent" where the context may well encourage this impression (e.g., THE INTELLIGENT CHOICE, THE INTELLIGENT SOLUTION, YOUR INTELLIGENT ALTERNATIVE, THE INTELLIGENT APPROACH, THE INTELLIGENT SOURCE, etc.).

All relevant uses in this record by applicant place the word "Intelligent" immediately before the generic designation "tire" (e.g., "Intelligent Tire"). The adjective in this context could be proper trademark usage or could be merely descriptive usage. Applicant's use of the term in lower case letters on its website (see footnote 26, *infra*) suggests the latter. See In re Gould Paper Corp., 834 F2d 1017, 5 USPQ2d 1110 (Fed. Cir. 1987). Conversely, the mere fact that

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<sup>25</sup> In the presentations and articles about advanced technology tires contained within the instant record, various presenters, authors, quoted speakers, and/or headline writers have also used the words "smart," "intelligent" or "brainy" to mean a high mental capacity (in the "smart buy" sense). Opposer's own slide presentation, in touting the long-term savings for members of the audience involved in long-haul trucking, says that "The *Smartest* Fleets Will Have The *Intelligent* Tire System By Goodyear." However, despite clever serial plays on the words "smart" and "intelligent," we do not conclude that the use of the word "smart" in this context, meaning "wise," creates a "double entendre" for the word "intelligent" as applied to tires.

applicant often capitalizes the term cannot salvage a term that the record shows otherwise to be a descriptive term.

Moreover, the record shows that applicant has regularly touted in press releases its "revolutionary ... breakthrough tire technology." In this context, purchasers and potential purchasers will readily perceive the word "intelligent" as fitting well with the dictionaries' modern, high-tech meaning of being "... able to vary its state or action in response to varying situations, varying requirements ... ."

As seen earlier, because applicant and its family of companies supply brakes, tires, and suspension components to the auto industry, applicant and its technology partners have developed a very different approach to gathering data from vehicle tires. With applicant's proprietary technology, sensors integrated into the vehicle pick up changes in deformation of the tires, and then using advanced diagnostics and expert systems, the related systems can actually communicate a myriad of dynamic parameters to the driver. The weight of the evidence suggests that Continental's innovative technology focused on magnetized tire sidewalls require no micro electronic circuits in the tire itself.<sup>26</sup>

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<sup>26</sup> On the other hand, despite the overall thrust of applicant's case herein, we should note in passing that one of the other areas of continuing development for applicant's "Intelligent" tire is an RF tag. Several articles contained in this record, including applicant's own webpage, suggest that in addition to the SWT external sensors mounted on the strut, some type of tread area

However, we find that it strains logic and common sense to contemplate a situation where the precise location of a miniaturized component within a module, device or larger system determines whether a system having enhanced capabilities is or is not deemed to be "intelligent." The focus needs to remain on the functionalities or capabilities of the tire and tire monitoring system, not on whether the tire itself has a MEMS-based pressure sensor (or RF tag, transponder, etc.). In this regard, we note that "[t]he factual situations in which mere descriptiveness must be

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sensors (e.g. an RF tag, "chip") may be added to its intelligent tire in the future. For example, it is fairly clear that the centerpiece of applicant's claimed technology does not identify the tire with a unique ID number, it does not include a tire pressure monitoring system to provide direct measurements of current tire inflation pressure, a measurement of internal tire temperature, data on the state of the road, the wear of the tread, etc.

See the following excerpt on applicant's webpage:

The 'intelligent' tire

The tire is an integral element of the chassis; As link between the road and the vehicle it supplies automotive control systems with valuable information on what's going on "down under".

A look into the future:

The tire acquires "intelligence" in the form of a sensor embedded in the tread (right-hand figure). In completely wireless fashion, the tread pattern sensor transmits data to the automotive electronics, e.g. on critical conditions such as wet, icy or snow-covered roads.

On the verge of production-readiness

The sidewall torsion sensor system (SWT), a Continental innovation on which a worldwide patent is pending. The technique makes best use of the deformation a tire undergoes when accelerating, braking or negotiating a curve. The magnitude of the deformation is an indication of the force at work on the tire. Two sensors in the tire - one in the vicinity of the rim and the other in the vicinity of the tread - measure the deformation. The readings are passed on to automotive control systems such as the Electronic Stability Program (ESP), thereby allowing them to respond better and more precisely on the basis of this supplementary information.

[http://www.conti-online.com/en/portal/general/innovation/inno\\_swt\\_en.html](http://www.conti-online.com/en/portal/general/innovation/inno_swt_en.html)

resolved are too varied to lend themselves to resolution under any rigid formula." In re Omaha National Corporation, 819 F.2d 1117, 2 USPQ2d 1859, 1861 (Fed. Cir. 1987).

Consistent with the nature of applicant's proprietary technology (i.e., the Sidewall Torsion Sensor, or SWT), applicant's tires will likely not contain a microprocessor within the shell or structure of the tire itself. In its answer to the notice of opposition, applicant alleges that its tires "do not contain sensor devices that transmit information nor are they part of a system that does so." We agree that a microprocessor may not be physically present within the tires themselves. The record shows that the condition and operation of applicant's tires are monitored through sensors connected to computerized systems, even though applicant's electronic circuitry is external to the tires themselves. Nonetheless, we find it a bit strained for applicant to argue with credibility that the tires are not 'part of a system' that transmits information.

The record makes it clear that vehicle tires can supply a wealth of useful information, but only if this data can be measured with precision and then communicated to external devices. After the respective types of sensor modules decode the data transferred from the tire, the data is transmitted on to a controlling process such as a host computer. Clearly,

any sensor subsystem is useless without a host system to collect a myriad of data and then convert such into useful information for the end-user. Opposer's tire with RF tags is useless without the rest of the tire system. Similarly, applicant's tire with magnetized sidewalls is useless without the rest of the components contemplated in its vehicle control system.

In its brief, applicant argues that the term "Intelligent" is vague and general as applied to tires. Accordingly, applicant alleges that in each of opposer's public presentations, the Goodyear employee doing the presentation had to "spoon feed" the audience a definition of what they meant by the term "intelligent tire."<sup>27</sup> According to applicant, the need Goodyear employees felt to supply a definition was an admission that the term was not then readily understood by prospective purchasers.

However, we find that given the recent advent of this technology in the tire industry, the whole concept of smart tires is just beginning to gain traction, and the term "intelligent tire" is relatively new to the lexicon.

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<sup>27</sup> The relevant page of the PowerPoint presentation follows:

The Intelligent Tire

The Intelligent Tire is able to sense and communicate, using radio frequencies, useful information about the tire and its condition:

-- *identification, pressure, and temperature*

Furthermore, inasmuch as Goodyear's "intelligent tire system" does rely upon radio frequencies, with its precise definition, opposer is merely identifying the particular technology that its system employs. In light of the newness of the technology, combined with the several competing methods for reading tire parameters and transferring the data, it is not surprising that the term might be defined the first time it appears within a public presentation. To the extent that this definition is consistent with the other evidence of record, it certainly corroborates the shared connotation of this term.

Furthermore, applicant objects to the testimony of opposer's witnesses about these presenters' respective "impressions" of the understanding of the term on the part of members of the audience. Applicant argues that any later understanding was tainted by the presentation. Yet the testimony shows that in each case, the presentation was followed by a question and answer period. Any disagreements or misunderstandings on the part of these knowledgeable audience members would certainly have been made known to the presenters. In any case, we give this testimony probative value to the extent that it comports with similar usage in substantially all of the published articles contained in this extensive record.

Applicant argues that the word "Intelligent" does not convey immediately a characteristic of tires with the requisite "degree of particularity." In re TMS Corp. of the Americas, *supra*. However, we find that "the requisite degree of particularity" standard does not require that the term convey precise information about how the involved technology works. Rather, it means that it forthwith conveys the fact that the tire so described comes with the enhanced capabilities prospective consumers are already coming to expect.

Applicant attempted to have opposer's primary witness enunciate specifically what grouping of parameters needed to be transmitted to a driver for a tire to qualify as an intelligent tire. During discovery, for example, applicant's counsel had a colloquy with Brian Logan in drawing distinctions between the general feedback auto drivers have gotten from the tires' contact with the road from the time of the Model T, as contrasted with the transfer of information one might anticipate from the intelligent tire.<sup>28</sup> Mr. Logan

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<sup>28</sup> Question by John S. Cipolla: When your tire hits a rock and the tires turn to the right, and you feel it through the steering wheel, aren't the tires transferring information back to you? ...  
Answer by Brian M. Logan: No, the steering wheel is what you're feeling. I don't know what the tires -  
Q: So it's your position, when the tires turn to the right, you're not receiving any information from the tires?  
A: Not *per se* ...  
Q: What do you mean, not *per se*? Aren't the tires transferring information back to you the entire time that you're driving, through that steering wheel?

testified, in effect, that he 'knows an intelligent tire when he sees it.' And again, we find that the correct resolution of the issue before us is not subject to such a rigid formulation. In re Omaha National Corporation, supra.

It is also critical to a correct determination in this case that one identify the relevant consumers and/or prospective purchasers, and assess from the record their respective understandings of the term "intelligent" in the context of tires.

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A: Everything is transferring information through that steering wheel to me.  
Q: Including the tires?  
A: Including the engine, including the brakes, including the tie rod.  
Q: And including the tires?  
A: And including the contact patch between the tire and the road?  
Q: And including the tire itself? You said everything. You mean the tire isn't? All those other things are, but the tire is not?  
A: No, I did not say the tire was not?  
Q: So the tire is transferring information back to you through the steering wheel?  
A: The whole system, which includes the tire.  
Q: Is?  
A: Is transferring information.  
Q: Okay. So the tire is transferring some information to you through the steering wheel?  
A: The whole system is transferring information, including the rock.  
Q: And including the tire?  
A: Including the rock.  
Q: And including the tire?  
A: And including the tire.  
Q: So in that situation, is that tire intelligent?  
A: I would say, depending on what kind of information it's giving back, it would be intelligent or not intelligent. So the tires I have on my car, I would say they're not intelligent.  
Q: Even though they are transferring information back to you?  
A: Yes, because it depends on the kind of information you are getting.  
Q: Well, what kind of information would be intelligent information?  
A: Information that would help me to control my vehicle or use my tires more appropriately...

(Discovery Deposition of Brian M. Logan, November 30, 2000, pp. 22 - 25).

At this stage of development of smart tire technology, the articles all point to the primary relationship existing between the large tire manufacturers (i.e., applicant, opposer and their large, third-party competitors) and the original equipment manufacturers that want to take advantage of state-of-the-art sensor technologies, namely, the even larger automakers. Smart tires as currently conceived cannot be sold in the aftermarket for vehicles sold without all the accompanying technology. Hence, many of the presentations on smart tires made by tire manufacturers were to specialized groups, such as representatives of original equipment manufacturers, engineers and designers of larger modules or components, managers of large fleets of trucks, etc. While there are precious few examples in the record of smart tires available to average consumers in the marketplace, in the long-term, if these technologies are going to be widely available on new vehicles, the group of prospective consumers will have to include ordinary consumers of automobiles and automobile tire systems. The most technical presentations and specialized literature in this record appear to have been directed to engineering types involved in basic research and development on smart tires. However, some of the sources (e.g., Ward's Auto World, the Internet articles, etc.) are clearly available to potential consumers from among the

members of the general public. Recent purchasers of brand new high-end vehicles having intelligent tires would have seen this feature touted in sales literature. Hence, the record shows that beginning with those in the tire and auto industries, this descriptive terminology is filtering down to all potential consumers as a shorthand reference for this technology.<sup>29</sup>

We have seen that opposer's technology employs RF tags while applicant's series of inventions contained in applicant's continuing patents depend upon a system having two external sensors mounted in close proximity to the magnetized sidewall of the tire. Yet taken together, all the literature in this record on innovations in the area of tire monitoring, including applicant's patents, demonstrates that tire systems are becoming increasingly sophisticated. The evidence establishes that dumb, round, rubber tires are morphing into ever more highly automated "corner modules." Thus, it is reasonable to assume that the relevant purchasers of commercial and consumer tires will understand the operation,

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<sup>29</sup> As applicant argues, it is true that opposer has not provided survey evidence about the perceptions of ordinary consumers when faced with the term "intelligent" when used in connection with tires. However, evidence of the relevant public's understanding can be obtained from newspapers, magazines, trade journals and other publications without demonstrating the effect of this evidence on the consuming public. See In re Northland Aluminum Products, Inc., 777 F.2d 1556, 227 USPQ 961 (Fed. Cir. 1985). There is nothing in trademark law or practice that requires a plaintiff to offer up a survey to support an allegation of descriptiveness.

functioning and performance of tires having advanced computer-controlled capabilities, and that they would describe tires or tire modules (and the larger automated systems with which these tires or tire modules interface or communicate) as "intelligent."

Applicant objects to opposer's focus on "tires with enhanced features," etc., and makes the argument that a determination of descriptiveness under Section 2(e)(1) of the Act must be made with regard to the goods as identified in the application ("tires"), and not the larger system revealed by the evidence of record, citing to Octocom Systems, Inc., v. Houston Computers Services, Inc., 918 F.2d 937, 16 USPQ2d 1783, 1787 (Fed. Cir. 1990).

We find that the term "tires" without any further characterization is certainly broad enough to include tires having enhanced capabilities, or which are capable of being monitored by monitoring systems in vehicles. Moreover, applicant is reluctant to admit that the other necessary components of applicant's smart tire system are inextricably tied into the enhanced functionalities of the tire. It is this precise combination of tires, sensors, on-board computers, etc., that the market values in Continental's smart tire, and those of its competitors.

Applicant's principal contention is that the term "Intelligent" does not have a readily understood meaning in the context of either popular or technical usage. Yet this record has dictionary definitions, PowerPoint presentations, trial testimony, published articles, patents and other literature, all of which plainly demonstrate that the term "intelligent" and the synonymous term "smart" are increasingly used in connection with the systems surrounding vehicle tires to designate a sensing or communicating system which has processing capabilities.

As noted earlier, tires have historically been the dumbest of components. But today, the record shows that we are faced with a situation where radio frequency transponders containing micro electronic circuits is a fairly well established technology that continues to evolve over time. Accordingly, most of the major tire manufacturers are beginning to distinguish tire system technologies having sensors and microprocessors from similar tire systems without microprocessors by using the descriptive terms "intelligent" or "smart." As was the case for the word "smart" as applied to probes in Cryomedical Sciences, *supra*, the current record contains persuasive, probative evidence that the term "intelligent," when applied to tires that are part of an enhanced tire system, is merely descriptive.

In fact, we saw earlier a quotation from Jim Giustino, senior research associate for Continental General Tire, where he is quoted as saying that "[t]he intelligent tire is perhaps as revolutionary as radialization." After studying this record carefully, we agree with this parallel. First, like radial tires, this latest tire technology will significantly enhance tire maintenance, wear and auto safety. Second, like the term "radial tire," the term "intelligent tire" conveys readily understandable information about the characteristics of the affected tire.

As argued by opposer, we find it perfectly clear that applicant's goods are designed to integrate "intelligent tire technologies" into a wide variety of vehicles manufactured or owned by others. The bulk of the evidence in this record points to a clear descriptive meaning among the key players in the auto and tire industries. See In re Omaha National Corporation, 819 F.2d 1117, 2 USPQ2d 1859 (Fed. Cir. 1989) [It is enough that bank's corporate users would understand that "first tier" describes a certain class of bank even though "corporate customers may constitute a smaller number of accounts than individuals"].

Hence, to the prospective consumers, whether purchasing agents for original equipment manufacturers such as the large automakers, engineers, component

designers, fleet manager or even ordinary consumers, there is nothing in the term intelligent, in the context of applicant's tires, that would be ambiguous or incongruous. To the contrary, it is our view that, when used on or in connection with applicant's tires, the term "intelligent" immediately describes, without conjecture or speculation, a significant feature or characteristic of applicant's goods, namely, that these tires will function to provide data to the driver and/or to other external displays, as discussed herein. Nothing will require the exercise of imagination, cogitation, mental processing or gathering of further information in order for purchasers and prospective customers of applicant's goods readily to perceive the merely descriptive significance of the term "intelligent" as it pertains to applicant's tires.<sup>30</sup>

*Decision:* The opposition is sustained and registration to applicant is refused.

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<sup>30</sup> Although much of this record herein would appear to support a finding that the term "intelligent" may be generic for tires having enhanced features such as applicant's tires, at this juncture, we are not called upon to make that determination. Rather, we hold only that the term "intelligent" is merely descriptive as applied to vehicle tires.