

IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF WISCONSIN

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WNS HOLDINGS, LLC,

Plaintiff,

v.

UNITED PARCEL SERVICE, INC.,

Defendant.  
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OPINION AND ORDER

08-cv-275-bbc

This is a patent infringement suit in which plaintiffs WNS Holdings, LLC, Intelligent Technologies International, Inc. and Mark Alan Eberwine contended that defendant United Parcel Service, Inc. uses technology on its aircraft that infringes several of plaintiffs' patents. On March 13, 2009, I granted the parties' joint motion to dismiss several of plaintiffs' claims and defendant's counterclaims, dkt. #92, trimming the case from a three-party, five-patent case to a two-party, two-patent case. The dismissed claims and counterclaims were the only ones relating to plaintiffs Intelligent Technologies International, Inc. and Mark Alan Eberwine, so I have deleted their names from the case caption. The remaining claims and counterclaims relate to claim 7 of plaintiff WNS's United States Patent No. 5,351,194 (the

'194 patent) and claim 1 of plaintiff WNS's United States Patent No. 6,314,366 (the '366 patent). Jurisdiction is present. 28 U.S.C. §§ 1331 and 1338.

The case is before the court on defendant's motion for summary judgment on its non-infringement, invalidity, laches and estoppel counterclaims and defenses. I conclude that plaintiff has failed to adduce sufficient proof to allow a reasonable jury to find that the equipment used in defendant's aircraft infringes either of plaintiff's patents and that defendant is entitled to summary judgment on plaintiff's infringement claims. It is not necessary to reach defendant's other counterclaims or defenses.

Also before the court are the parties' disputes relating to evidence supporting their proposed findings of fact and plaintiff's motion to file a supplemental response to defendant's motion for summary judgment, dkt. #166. I will address these evidentiary and procedural matters before discussing defendant's motion for summary judgment.

#### A. Evidentiary Disputes

In its response to defendant's proposed finding of fact, dkt. #137, plaintiff objects to many of defendant's proposed findings of fact on the ground that the facts are supported by expert testimony from witnesses not designated as experts. Specifically, plaintiff contends that the declaration and deposition testimony of defendant's witness Greg Kuehl contains expert testimony but Kuehl was never named or qualified as an expert and thus Kuehl's

testimony violates the court's preliminary pretrial conference order and Fed. R. Evid. 701.

According to the preliminary pretrial conference order the parties were required to disclose all expert witnesses in accordance with Fed. R. Civ. P. 26(a)(2)(A), (B) and (C) by February 9, 2009 for the proponent and by March 9, 2009 for the respondent. Dkt. #17 at 3. The order specified that “[f]ailure to comply with these deadlines and procedures could result in the court striking the testimony of a party’s expert pursuant to Rule 37.” Id. Rule 37 states that a failure to disclose an expert or supplement his testimony prevents the party proposing the testimony from using “that information or witness to supply evidence on a motion, at a hearing, or at a trial, unless the failure was substantially justified or is harmless.” Defendant did not disclose Kuehl as an expert witness and does not contend that its failure to disclose Kuehl is substantially justified or harmless. Thus, the issue is whether Kuehl’s testimony is correctly characterized as lay or expert testimony.

Under Fed. R. Evid. 602, “A witness may not testify to a matter unless evidence is introduced sufficient to support a finding that the witness has *personal knowledge* of the matter.” (Emphasis added.) Further, under Rule 701, a lay witness may testify about his opinions or inferences that are:

- (a) rationally based on the perception of the witness, (b) helpful to a clear understanding of the witness’ testimony or the determination of a fact in issue, and (c) not based on scientific, technical, or other specialized knowledge within the scope of Rule 702.

The addition of subsection (c) to Rule 701 was intended to “eliminate the risk that the reliability requirements set forth in Rule 702 [would] be evaded through the simple expedient of proffering an expert in lay witness clothing.” Fed. R. Evid. 701, advisory committee note (2000). The relevant distinction is between expert and lay testimony, not expert and lay witnesses. Id. In other words, “it is possible for the same witness to provide both lay and expert testimony in a single case.” Id.

Plaintiff contends that much of Kuehl’s testimony violates Rule 701 because it is based on technical or other specialized knowledge as evidenced by the fact that “[h]e repeatedly refers to the functioning and interrelation of highly sophisticated pieces of avionics equipment[.]” Plt.’s Resp. Br., dkt. #136, at 10. Defendant contends that the mere fact that Kuehl’s testimony is of a “technical nature” does not transform into expert testimony his factual testimony about what equipment is found on defendant’s aircraft and how that equipment works, information that defendant contends is based on Kuehl’s personal knowledge and observations. Def.’s Reply Br., dkt. #163, at 32.

The Court of Appeals for the Seventh Circuit has provided guidance on distinguishing between lay and expert testimony:

Lay opinion testimony most often takes the form of a summary of first-hand sensory observations. The opinion provides the jury with a more complete picture than would be provided by a recitation of each component fact. Lay opinion testimony is admissible only to help the jury or the court to understand the fact about which the witness is testifying and not to provide specialized explanations or interpretations

that an untrained layman could not make if perceiving the same acts or events. Expert opinion, by contrast, need not be based on first-hand knowledge of the facts of the case. It brings to an appraisal of those facts a scientific, technological or other specialized knowledge that the lay person cannot be expected to possess.

United States v. Conn, 297 F.3d 548, 553-54 (7th Cir. 2002) (internal quotations and citations omitted). (I note that the law of the Court of Appeals for the Seventh Circuit applies with respect to determining whether the testimony in this patent case is lay or expert because the question concerns a procedural issue not unique to patent law. Micro Chemical, Inc. v. Lextron, Inc., 317 F.3d 1387, 1390-91 (Fed. Cir. 2003).) Testimony is expert in nature when it is the type that “could have been offered by *any* individual with specialized knowledge of the [relevant topic].” Conn, 297 F.3d at 555 (emphasis added).

There is no doubt that some of Kuehl’s testimony in his declaration and deposition is expert testimony. For example, Kuehl’s testimony about what Automatic Dependent Surveillance-Broadcast (ADS-B) is and how defendant’s Traffic Alert and Collision Avoidance System II (TCAS II) transmit information is expert testimony. E.g., dkt. #123, ¶¶ 5, 6, 48 & 49. Such testimony could be offered by any individual with specialized knowledge of Automatic Dependent Surveillance-Broadcast or Traffic Alert and Collision Avoidance System II. Further, it should come as no surprise that testimony about *how* equipment works generally requires a foundation of specialized knowledge to produce explanations or interpretations that an untrained layman could not reach from perceiving

the same equipment in use. It would not be possible for an untrained layman to observe defendant's Traffic Alert and Collision Avoidance System II in use and know how Resolution Coordination Messages are transmitted. Instead, it is Kuehl's specialized knowledge of the equipment that permits him to explain the message transmission process used by defendant's aircraft. A lay person cannot be expected to possess Kuehl's specialized knowledge about avionics equipment. Thus, the portions of Kuehl's testimony explaining how equipment found on defendant's aircraft works is expert testimony and cannot be used to support defendant's proposed findings of fact because defendant never disclosed Kuehl as an expert. I will disregard proposed facts supported by testimony by Kuehl to which plaintiff has objected.

Nonetheless, there are portions of Kuehl's testimony that cannot be properly characterized as expert testimony. Kuehl's testimony about what equipment and avionic systems are found on defendant's different aircraft arises solely from his personal, first-hand sensory observations obtained from installing that equipment and those systems. For example, Kuehl's testimony that "[a]ll UPS aircraft operated in the United States implement ADS-B functionality[,]” and that “ADS-B is a functionality that requires multiple pieces of equipment for performance” is lay testimony about the equipment and systems found on defendant's aircraft. He he is not explaining how the equipment or system works but only what the equipment is and what makes up the system. Therefore, Kuehl's testimony about

what equipment and avionic systems are found on defendant's aircraft is admissible lay testimony under Rules 602 and 701 and will not be disregarded. I will apply the same lay-expert distinction in considering defendant's proposed findings of fact that rely on other witnesses.

Next, plaintiff objects to the proffered expert reports on non-infringement and invalidity of defendant's expert, William Cotton. Plaintiff contends that Cotton fails to qualify as an expert under Fed. R. Evid. 702 because "he lacks the knowledge of critical patent law standards." Plt.'s Resp. Br., dkt. #136, at 5. Defendant is not offering Cotton as an expert in patent law, but in avionics. He is in no position to give an ultimate opinion about invalidity or infringement. Even if he were, such an opinion would be of no use in any event. Dynacore Holdings Corp. v. U.S. Philips Corp., 363 F.3d 1263, 1277-78 (Fed. Cir. 2004) (expert's unsupported conclusion on ultimate issue of infringement is insufficient to raise genuine issue of material fact). What matters is the expert's testimony about how the device works or what makes the patented invention obvious.

Plaintiff's concern about Cotton's reliance on defendant's attorneys to supply him with the proper patent law standards is misplaced. Under Fed. R. Civ. P. 26(a)(2)(B), counsel are not precluded "from providing assistance to experts in preparing the [expert] reports, and indeed, . . . this assistance may be needed." Fed. R. Civ. P. 26(a)(2)(B) advisory committee note (1993). Defendant's attorneys provided Cotton the relevant legal standards

but it does not follow that Cotton's ultimate opinions were merely a parroting of the attorneys' arguments.

Plaintiff's challenges to Cotton's lack of expertise in patent law do not undermine Cotton's qualifications and testimony as an avionics expert. His testimony is helpful with respect to understanding the avionics equipment and systems at issue as well as avionics in general. Although Cotton makes several statements about whether the patent is invalid, obvious or infringed, the statements do not support exclusion of his expert reports altogether. Any conclusory statements will be disregarded. This same principle applies to any expert opinion testimony regarding invalidity, obviousness or infringement.

Defendant objects to the declarations from several of plaintiff's experts that contain statements or opinions that were alterations of those found in the experts' initial reports and not disclosed in supplemental reports. The court's preliminary pretrial conference order requires supplementation of expert reports in writing, "served no later than five calendar days before the expert's deposition." Dkt. #17 at 3. Although some of the declarations contain supplemental opinions, plaintiff never notified defendant of the supplementation and defendant never had an opportunity to depose the experts about the supplemental opinions. For example, plaintiff's expert, Dr. James Knox, stated in his initial expert report that a "controller" "is a standard term in the art and is known to refer to any piece of equipment which serves a control function." Knox Exp. Rep., dkt. #124-14, at 20.

However, in a declaration submitted with plaintiff's response to defendant's motion for summary judgment, Knox added that a "controller" "is known to refer to any piece or pieces of electronic circuitry or equipment which serves a control function." Knox Decl., dkt. #140, at 32 ¶152 (underlining added). Because defendant did not have an opportunity to depose plaintiff's experts regarding any supplementation of their opinions, I will disregard any proposed facts supported by these supplementations to which defendant has objected.

B. Plaintiff's Motion for Leave to File a Supplemental Response

At the close of briefing on defendant's motion for summary judgment, plaintiff filed a motion to submit supplemental responses to defendant's motion. Dkt. #166. Plaintiff contends that the court should consider its supplemental filings because they address relevant, newly-discovered evidence that was not produced by defendant until May 5, 2009. Plaintiff contends that the videos show ADS-B systems on a cockpit in one of defendant's aircraft, supporting its contention that defendant's aircraft use Automatic Dependent Surveillance-Broadcast movement and location information to generate evasive maneuvers for the aircraft. The motion will be denied as untimely.

Plaintiff alleges in its motion that it was unaware of the flight test video evidence until receipt of the videos on May 5, 2009. However, plaintiff concedes in its reply brief, dkt. #173, that it was made aware of the videos on January 28, 2009 during the deposition of

defendant's employee, James Walton. Although plaintiff concedes that its attorney asked for the videos on January 28, it contends that it was prevented from determining whether it had the videos at the time because defendant's attorney said that he believed that the videos had been produced in response to July 15, 2008 discovery requests. Plaintiff complains that as of March 11, 2009, defendant had produced 290,299 pages of documents and "some" videos, suggesting that the large amount of discovery received from defendant in response to the July 15 discovery requests made it difficult to determine whether it in fact had the relevant videos. Dkt. #173 at 3. Plaintiff should not complain that it was prejudiced by having to evaluate a large amount of discovery in a short time, as it might have anticipated when litigating in a forum it chose for its speed. Plt.'s Resp. Br. to Def.'s Mtn. to Transfer, dkt. #27, at 27-29. The overall amount of discovery documents is irrelevant. All that matters is how many videos were produced. Plaintiff does not explain why it would have been difficult to look through "some" videos to determine whether the relevant ones had been produced.

If plaintiff believed the videos to be important, it should have put in the effort to insure it had them and should have sought a motion to compel if they were withheld when it discovered their absence. The court's preliminary pretrial conference order is clear:

Parties are to undertake discovery in a manner that allows them to make or respond to dispositive motions within the scheduled deadlines. The fact that the general discovery deadline cutoff . . . occurs after the deadlines for filing and briefing

dispositive motions is not a ground for requesting an extension of the motion and briefing deadlines.

. . . .

This court also expects the parties to file discovery motions promptly if self-help fails. Parties who fail to do so may not seek to change the schedule on the ground that discovery proceeded too slowly to meet the deadlines set in this order.

Dkt. #17 at 4 & 6. Plaintiff became aware of the existence of the videos in late January 2009, dispositive motions were not due until the end of March 2009 and its response to defendant's motion for summary judgment was not due until the end of April 2009. In other words, it had approximately three months in which to seek the production of the videos or file a motion to compel. It did not pursue the issue until after the completion of briefing on defendant's summary judgment motion. Plaintiff's motion to file a supplemental response to defendant's summary judgment submissions will be denied as untimely.

Having sorted through the parties' evidentiary disputes and taking them into account in making findings of fact, I find that the following facts are undisputed and material.

## UNDISPUTED FACTS

### A. Patents in Suit

In 2006, plaintiff WNS Holdings, Inc. was assigned the rights to the '194 and '366 patents by Worldwide Notification Systems, Inc., a related Georgia company.

1. The '194 patent

The '194 patent is entitled "Apparatus and Method for Closing Flight Plans and Locating Aircraft." Only claim 1 and claim 7, which is dependant from Claim 1, are at issue.

Claim 1 states:

1. An apparatus for monitoring a status and location of an aircraft, comprising:

a receiver attached to an aircraft for receiving a positioning signal from each of a plurality of transmitters located at separate known locations;  
a switch located on the aircraft and indicating a status of the aircraft;  
a controller operatively connected to the receiver and the switch for determining the location of the aircraft based upon the positioning signals, said controller detecting the status of the aircraft by sensing the switch;  
a communicator operatively connected to the controller for communicating a signal to the air traffic control center to report the status and location of the aircraft in response to the switch.

'194 pat., col. 7, lns. 25-40. Claim 7 states:

7. The apparatus of claim 1 wherein said switch comprises an automatic switch operatively connected to the aircraft landing gear for automatically indicating that the aircraft is landing.

Id. at col. 7, lns. 61-64.

2. The '366 patent

The '366 patent is entitled "Satellite Based Collision Avoidance System." Only claim

1 is at issue. It states:

1. A method for automatically coordinating a vehicle collision avoidance maneuver between vehicles comprising the steps of:

establishing a data link between a first and second vehicle;  
receiving and transmitting position and movement information for said vehicles between said vehicles.  
generating an onboard evasive maneuver for said first vehicle;  
synchronizing the transmission of said evasive maneuver to said second vehicle through said data link;  
transmitting said evasive maneuver from said first vehicle to said second vehicle through said data link; and  
displaying on a display device the evasive maneuver of said first vehicle.

'366 pat., col. 24, lns. 27-41.

#### B. Defendant's Airline Operations

As a package delivery company, defendant United Parcel Service has its own aircraft operations to transfer packages around the world. Defendant operates six different models of aircraft: Airbus 300, Boeing 747, 757 and 767, Douglas DC-8 and McDonnell-Douglas MD-11s. Defendant's entire fleet consists of 228 aircraft currently in service.

All of defendant's aircraft operating in the United States implement ADS-B functionality. The term Automatic Dependent Surveillance-Broadcast or ADS-B refers to a cooperative surveillance system that uses satellite technology, avionics equipment and a ground infrastructure to transmit flight information from aircraft to air traffic control quickly and accurately. ADS-B functionality can be split into two types: ADS-B In and

ADS-B Out. A vehicle that has ADS-B In capability has the ability to receive ADS-B information broadcast from another source, which enhances the pilot's situational awareness of other nearby aircraft. A vehicle that has ADS-B Out capability has the ability to broadcast ADS-B information. An ADS-B Out capable aircraft may not be ADS-B In capable.

Defendant began installing ADS-B Out in all its aircraft in 2000. In 2001, it began equipping only its Boeing 757 and 767 aircraft with ADS-B In. During that same time, defendant was working to implement ADS-B-related solutions in its various aircraft. The work included efforts to correlate certain ADS-B and Traffic Alert and Collision Avoidance System (TCAS) display data in its aircraft's cockpits. ADS-B functionality is not embodied in a single piece of equipment on defendant's aircraft. Such functionality requires multiple pieces of equipment. ADS-B messages include various pieces of information about the plane, including latitude, longitude, altitude, speed, identification and time information.

Defendant's aircraft use two primary pieces of equipment for implementing ADS-B Out: Global Positioning System receivers and Mode-S Transponders. Defendant's various aircraft use different types of GPS receivers and transponders depending on the aircraft. Each aircraft has one or more GPS receivers. For example, defendant's Boeing 757 aircraft use Garmin GPS receivers contained in the Garmin Link and Display Processor Unit. However, some of defendant's Boeing 767 aircraft are equipped with Garmin Link and Display Processor Units, but do not use the GPS receiver contained in the Unit. Instead,

those 767s use separate GPS receivers referred to as multi-mode receivers. Each of defendant's aircraft contains a Mode-S Transponder.

Although all defendant's aircraft implement ADS-B Out, only some of its aircraft implement ADS-B In. Specifically, 75 of defendant's 757s and 32 of its 767s implement ADS-B In. Defendant's Boeing 757 and 767 aircraft implement ADS-B In using one of two configurations that permit implementing ADS-B In in combination with the Traffic Alert and Collision Avoidance System. (TCAS is a system to provide an early alert to pilots of an impending collision with an aural alert and a display of the location of the threat aircraft). The "SafeRoute" configuration uses an ACSS 3000 series surveillance processor to receive and process ADS-B In messages and an Electronic Flight Bag to display ADS-B information in the cockpit. This configuration also uses a separate AT 2000 display unit to display traffic data. The Link and Display Processor Unit configuration uses a Garmin Link and Display Processor Unit to receive and process ADS-B In messages and an AT 2000 display unit to display traffic data.

Six of defendant's Boeing 757 aircraft use the SafeRoute configuration and 69 of its 757s use the Link and Display Processor Unit configuration. Five of defendant's Boeing 767 aircraft use the SafeRoute configuration and 27 use the Link and Display Processor Unit configuration. All of defendant's Boeing 757 and 767 aircraft use the following equipment: GPS receivers; ACSS Mode-S Transponders; AT 2000 display units for displaying traffic

information; and two Vertical Speed Indicator Resolution Advisory displays on which TCAS-produced Resolution Advisories are displayed.

All of defendant's aircraft include various switches and sensors that determine when weight is put on the aircraft's wheels. These are referred to generally as weight-on-wheels switches or sensors. These weight-on-wheel switches are part of the air/ground relay system on an aircraft that transmits ADS-B position report messages with respect to whether the aircraft is in the air or on the ground. When the weight-on-wheels switch is in the open mode, it identifies the aircraft as being in the air and when the switch is in closed mode it identifies the aircraft as being on the ground. Although the ADS-B position report message is sent periodically as a function of time regardless of the position of the switch, the content of the message changes depending on whether the weight-on-wheels switch is open or closed.

Defendant has implemented equipment performing TCAS II software version 7 in all of its aircraft. TCAS II not only provides an early alert of an impending collision but it also provides evasive maneuver guidance to avoid an impending threat. Defendant's Boeing 757 and 767 aircraft are equipped with one of two TCAS Computer Units. Defendant's 757s and 767s that use the Link and Display Processor Unit configuration use a TCAS 2000 computer unit. Defendant's 757s and 767s that use the SafeRoute configuration use a TCAS 3000 computer unit.

The TCAS II devices on defendant's aircraft send interrogations, listen for replies and

use radar timing principles in order to track other aircraft, determine which aircraft might constitute collision threats and generate evasive maneuvers to avoid such threats. The TCAS II devices do not use ADS-B position and movement information to generate evasive maneuvers. Instead, the devices repeatedly transmit interrogations and receive repeated replies that establish the replying aircraft's position in space. The replies contain the replying aircraft's 24-bit ICAO address and present altitude but do not contain the aircraft's latitude or longitude.

The TCAS II devices also transmit and receive Resolution Coordination Messages and Replies. A Resolution Coordination Message is transmitted when an aircraft's TCAS determines that there is a resolution advisory, that is, that another aircraft poses a collision threat. The message is transmitted at a rate of once per second, as opposed to every eight to ten seconds as done during the normal broadcast interrogation phase, as long as the other aircraft remains a threat. The message contains a vertical resolution advisory complement, which tells the threatening aircraft what not to do, and it requests a reply from the threatening aircraft to confirm receipt of the message. The messages are transmitted over the same 1030/1090 MHz channels used for surveillance interrogations and replies. If the initiating aircraft does not receive a reply message, it will re-interrogate or re-transmit the Resolution Coordination Message multiple times. In other words, the message is sent repeatedly until it is received by the threatening aircraft as confirmed by a reply.

To help avoid interference in messaging, TCAS II uses selective addressing of aircraft and signal transmission/processing techniques such as sidelobe suppression and use of both directional and omnidirectional antennas. Further, messages may be “jittered,” which involves random increases and decreases in the time between the retransmission of messages. Although there is a method to the timing and manner in which these messages are transmitted, there is no coordination among aircraft regarding the transmissions, that is, the transmissions are asynchronous.

## OPINION

### A. Infringement Analysis

“Summary judgment on the issue of infringement is proper when no reasonable jury could find that every limitation recited in a properly construed claim either is or is not found in the accused device either literally or under the doctrine of equivalents.” U.S. Philips Corp. v. Iwasaki Elec. Co., 505 F.3d 1371, 1374-1375 (Fed. Cir. 2007) (quoting PC Connector Solutions LLC v. SmartDisk Corp., 406 F.3d 1359, 1364 (Fed. Cir. 2005)). Patent infringement analysis involves two steps. First, the patent claims must be interpreted or construed to determine their meaning and scope. Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed. Cir. 1995). Second, the properly construed claims are compared to the process or device accused of infringing. Id.

When construing claims, the starting point is the so-called intrinsic evidence: the claims themselves, the patent specification and the prosecution history. Teleflex, Inc. v. Ficosa North America Corp., 299 F.3d 1313, 1325 (Fed. Cir. 2002). Examination of the claims' language is the starting point for the well established process of claim construction. "Claim construction must adhere carefully to the precise language of the claims that the patent [examiner] has allowed." Ardisam, Inc. v. Ameristep, Inc., 336 F. Supp. 2d 867, 879 (W.D. Wis. 2004) (citing Autogiro Co. of America v. United States, 384 F.2d 391, 396 (Ct. Cl. 1967)). The language is given its ordinary meaning as it would be understood by one of ordinary skill in the relevant art, given its context and the other patent claims. Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342 (Fed. Cir. 2001). Moreover, district courts must remain aware that "[t]he patent applicant may not have used words consistent with the dictionary definition because an applicant can act as his or her own lexicographer or may disavow or disclaim aspects of a definition 'by using words or expression of manifest exclusion or restriction, representing a clear disavowal of claim scope.'" Ardisam, 336 F. Supp. 2d at 879-80 (quoting Golight, Inc. v. Wal-Mart Stores, Inc., 355 F.3d 1327, 1331 (Fed. Cir. 2004)).

This initial construction is then considered in light of the specification to determine whether the inventor expressed a different meaning for the language, whether the preferred embodiment is consistent with the initial interpretation and whether the inventor specifically

disclaimed certain subject matter. Rexnord, 274 F.3d at 1342-43. The specification contains a written description of the invention that is meant to help explain the invention and possibly define claim terms, Markman, 52 F.3d at 979, but as a general rule, “limitations from the specification are not to be read into the claims.” Golight, 355 F.3d at 1331. Finally, the interpretation is examined for consistency with the patent’s prosecution history and any disclaimers made therein. Rexnord, 274 F.3d at 1343.

Last, a court may consult extrinsic evidence, such as dictionaries, treatises and expert testimony for background information and to “shed useful light on relevant art.” Phillips v. AWH Corp., 415 F.3d 1303, 1317 (Fed. Cir. 2005) (internal citations omitted). In general this type of evidence is less reliable than intrinsic evidence in determining the meaning of claim terms and is “unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence.” Id. at 1318-19.

Once the claims are properly construed, the plaintiff must prove that each claim element is present in the accused product, either literally or by equivalence, to establish infringement. Dawn Equipment Co. v. Kentucky Farms Inc., 140 F.3d 1009, 1015 (Fed. Cir. 1998); see also BMC Resources, Inc. v. Paymentech, L.P., 498 F.3d 1373, 1378 (Fed. Cir. 2007) (“Direct infringement requires a party to perform or use each and every step or element of a claimed method or product.”). Plaintiff must prove infringement by a preponderance of the evidence. Nutrinova Nutrition Specialties and Food Ingredients

GmbH v. International Trade Commission, 224 F.3d 1356, 1359 (Fed. Cir. 2000). Conversely, defendant can prevail by demonstrating that at least one element of the asserted claim is absent from its devices. Although in defending defendant’s motion for summary judgment plaintiff need provide only enough evidence for a reasonable jury to find infringement of the claims and elements challenged by defendant, “a patentee who fails to provide probative evidence of infringement runs the risk of being preemptorily nonsuited.” Novartis Corp. v. Ben Venue Laboratories, Inc., 271 F.3d 1043, 1050-51 (Fed. Cir. 2001). General or conclusory assertions are insufficient. TechSearch, L.L.C. v. Intel Corp., 286 F.3d 1360, 1372 (Fed. Cir. 2002).

#### B. Infringement of Claim 7 of the ‘194 Patent

Plaintiff contends that defendant’s aircraft infringes claim 7 of the ‘194 patent because it uses ADS-B Out functionality with a weight-on-wheels switch to indicate that an aircraft is landing. Defendant denies that the equipment used in its aircraft reports the status and location of the aircraft in response to the switch as required by independent claim 1. ( As a dependent claim, claim 7 can be infringed only if the claim from which it depends is infringed.) Defendant raises other arguments as well, but this one argument establishes non-infringement, which makes it unnecessary to address the others.

The parties’ dispute centers on the construction of the term “report the status and

location of the aircraft in response to the switch” in claim 1. ‘194 pat., col. 7, lns. 39-40. On November 19, 2008, I granted defendant’s request for a claims construction hearing and agreed to construe six terms, including “report the status and location of the aircraft in response to the switch” in claim 1. The parties’ core dispute was whether “in response to the switch” meant that the switch has to be actuated for a signal to be transmitted. Defendant contended that the term required that actuation of the switch trigger the transmission of a signal. Plaintiff contended that the term did not require the actuation of the switch to trigger transmission, but applied to any signal sent whose message changed depending on the state of the switch. At the termination of the January 9, 2009 claims construction hearing, I construed the term to mean “report the status and location of the aircraft *when* the switch is activated.” Dkt. #62 at 1 (emphasis added). Although the construction was intended to support the conclusion that “in response to the switch” meant that activation of the switch triggered the transmission of a signal, plaintiff attempts to interpret the construction differently.

In opposing defendant’s motion for summary judgment, plaintiff resurrects its contention that “in response to the switch” does not require activation of the switch but should be understood to mean “in response to the state of the switch.” Plaintiff’s contention was unpersuasive before and fares no better the second time around.

The disputed term appears in the fourth separate phrase of claim 1, which reads as

follows:

a communicator operatively connected to the controller for communicating a signal to the air traffic control center to *report the status and location of the aircraft in response to the switch*;

'194 pat., col. 7, lns. 37-40. (Emphasis added). Although the claim language leaves the meaning of “in response” ambiguous, the specification helps to clear up the ambiguity. The specification says that the controller communicates with an air traffic control center *after* a switch is activated. Id., col. 5, lns. 48-56; col. 6, lns. 1-8, 23-29. It makes it clear that if a switch is not activated, the controller does not communicate a signal to air traffic control:

The controller **10** polls **56** the switches **12**, **14**, and **15** to determine the status of the aircraft. If activated (as discussed below), the controller **10** takes appropriate action. If any of the switches are not active, the controller repeats the steps of receiving and analyzing positioning signals periodically and polling.

Id., col. 5, lns. 38-43.

Further, the specification always speaks of the controller *initiating* its communication with air traffic control after the switch is activated:

After the aircraft has landed the second switch **14** communicates with the controller **10** to cancel **58** the flight plan. In response to the switch **14**, the controller **10** *initiates* communication with the flight control center **30** through the communications apparatus **24**.

In the event of a mid-flight emergency, the pilot activates **60** the controller **10** by operating the manual switch **15**. . . . The controller **10** in the meantime *initiates* communication with the flight control center **30** through the communications apparatus **24**.

The switch 12 moves from the first off-position to the second actuated-position. The controller 10 is thereby activated 68 to *initiate* communication with the flight control center 30.

Id., col. 5, lns. 52-56; col. 5, ln. 68 - col. 6, lns. 1-6; col. 6, lns. 25-29 (italics added).

Initiating communication would be unnecessary if, as plaintiff contends, communication was ongoing.

The inventors understood how to explain “actions responsive to the status of the switch,” as opposed to those “responsive to activation of the switch,” as evidenced in the portion of claim 1 that states, “said controller detecting the status of the aircraft by sensing the switch.” Id., col. 7, lns. 35-36. If the inventors had intended to patent an invention in which a signal was communicated periodically and only the content of the signal changed, depending on the status of the switch, they could have written “to report the status and location of the aircraft *by sensing* the switch.” Instead, they chose to say “in response to the switch.” That language supports the limitation that no signal is communicated until the controller responds to the activation of the switch. Thus, construing “in response to the switch” to require activation of the switch to trigger the sending of a signal to air traffic control is not reading a limitation from the specification into the claim but merely using the examples in the specification to help explain an ambiguous element in the invention.

Using the proper construction of “report the status and location of the aircraft in response to the switch,” no reasonable jury could find that the equipment in defendant’s

aircraft literally infringes claim 1 of the '194 patent. It is undisputed that the weight-on-wheels switch that defendant's aircraft use in conjunction with transmission of ADS-B position report messages does not result in a report on the status and location of the aircraft *when* the switch is activated. Instead, the position report message is sent periodically whether the switch is in open or closed mode; only the content of the message changes. In other words, when the aircraft lands and the weight-on-wheels switch changes from open to closed, it is not necessary to activate the switch to trigger a message. The switch on defendant's aircraft is always activated. Regardless of its position, a signal is always being sent to the air control center. Thus, the equipment on defendant's aircraft does not infringe this element of claim 1, despite plaintiff's conclusory assertions to the contrary. *E.g.*, Plt.'s Add'l PFOF, dkt. #162, at 14 ¶28. TechSearch, L.L.C. v. Intel Corp., 286 F.3d 1360, 1372 (Fed. Cir. 2002) (“[G]eneral assertions of facts, general denials, and conclusory statements are insufficient to shoulder the non-movant’s burden.”)

From the undisputed facts before the court, no reasonable jury could find that the equipment in defendant's aircraft literally infringes the “report the status and location of the aircraft in response to the switch” element of claim 1 of the '194 patent. Therefore, defendant's equipment cannot infringe claim 7 because that claim is dependent from claim 1.

Although plaintiff cites case law on infringement under the doctrine of equivalence

in its response brief, Plt.'s Resp. Br., dkt. #136, at 14, it says nothing about why the doctrine should apply to this element of claim 1. Plaintiff's silence on the subject waives its argument. Central States, Southeast and Southwest Areas Pension Fund v. Midwest Motor Express, Inc., 181 F.3d 799, 808 (7th Cir. 1999) ("Arguments not developed in any meaningful way are waived.") Accordingly, defendant's request for summary judgment will be granted as to plaintiff's claim that the equipment in defendant's aircraft infringes claim 7 of the '194 patent.

### C. Infringement of Claim 1 of the '366 Patent

Plaintiff contends that defendant's aircraft infringe claim 1 of the '366 patent by implementing ADS-B In together with TCAS. Although defendant sets out several reasons why its aircraft do not infringe claim 1, I need discuss only one because it supports a finding of non-infringement. Defendant's aircraft do not perform the step in claim 1 of "synchronizing the transmission of said evasive maneuver to said second vehicle through said data link." '366 pat., col. 24, lns. 36-37.

At the January 9, 2009 claims construction hearing, I construed "synchronizing the transmission of said evasive maneuver" to mean "coordinating the timing and manner of the transmission of the evasive maneuver so that the transmission can occur without interfering with other transmissions." Dkt. #62 at 2. Dependent claim 3 confirms the validity of this

construction. It claims utilization of “the Global Positioning System’s precision time to synchronize transmission of said position, movement and evasive maneuvers between said vehicles thereby preventing simultaneous transmission of said position, movement and evasive maneuvers by each said vehicle.” ‘366 pat., col. 24, lns. 49-51. In other words, the importance of a method of transmission synchronization is to insure that aircraft do not miss evasive maneuver data because they are trying to transmit data at the same time.

The specification emphasizes this understanding of synchronization. In it, the inventors discuss the problems with the prior art as well as a preferred embodiment of the invention. In the portion of the patent entitled “Background of the Invention,” the inventors describe several prior collision avoidance systems and their disadvantages. With the prior aircraft collision avoidance system referred to as the Traffic Alert and Collision Avoidance System (TCAS), a disadvantage was the difficulty in preventing interference with transmissions between aircraft. The inventors explained that

the TCAS interrogator/transponder protocol requires an elaborate antenna sidelobe suppression and receiver blanking technique to block transponder replies from close aircraft and to allow the system to poll aircraft further away. Such a system is again susceptible to noise, signal clutter, other spurious signals and multiple aircraft transponder within the same transponders reply time frame.

Id., col. 4, lns. 40-46. The claimed invention would be an improvement over TCAS, say the inventors, because synchronizing the transmission of an evasive maneuver would prevent difficulties caused by interference and simultaneous transmissions from multiple aircraft.

The patent's specification provides an example of synchronization when explaining a preferred embodiment of the invention that uses time division multiple access or TDMA protocol for communication between aircraft's satellite tracking alert resolution systems (STARS). Id., col. 10, lns. 20-22. According to the specification, TDMA protocol "works by dividing a radio frequency into a fixed number of time slots," id., col. 10, lns. 26-27. TDMA is used as an aircraft's data transfer protocol so that "[e]ach STARS transmits on its assigned slot and receives signals from other STARS on all the other TDMA slots," col. 10, lns. 38-40; see also col. 16, ln. 67 - col. 17, lns. 1-2 ("In the preferred embodiment, the TDMA protocol is used to synchronize STARS beacon and data link signals."); col. 10, lns. 26-28 ("Thus, the TDMA protocol synchronizes into the TDMA slot by finding a clear TDMA channel and transmitting its data block in that slot."). This communication protocol demonstrates transmission coordination of an aircraft's equipment. Therefore, "synchronizing the transmission of said evasive maneuver" is properly construed as coordinating the timing and manner of the transmission of the evasive maneuver so that the transmission can occur without interfering with other transmissions.

Plaintiff contends that defendant's aircraft's use of TCAS II to coordinate evasive maneuvers between other aircraft infringes the synchronization step of the method of claim 1. Plaintiff focuses on the fact that TCAS II implements different methods to help avoid transmission interference. However, none of those methods involve the coordination of the

timing and manner of the transmission of an evasive maneuver and no reasonable jury could find otherwise.

An initial flaw in plaintiff's contention is that some of the methods to which it refers, such as sidelobe suppression, are methods common to TCAS, as the inventors note in the background section of the patent specification. The patented invention was supposed to be an improvement on TCAS. In fact, the inventors identified the transmission interference problems common to TCAS as a disadvantage of that prior system. It is illogical to believe that the inventors were trying to patent a method for an automatic collision avoidance system that suffered from one of the specifically enumerated disadvantages found in the prior art.

The methods that TCAS II implements to avoid transmission interference are necessary to avoid the transmission interference expected when aircraft using TCAS II are transmitting messages to each other asynchronously, that is, at random times. For example, an aircraft may have to send multiple resolution coordination messages when using TCAS II (what the patent refers to as evasive maneuver messages) because there is no coordination between aircraft about when a message will be transmitted. Thus, the aircraft must transmit the evasive maneuver messages over and over in the hope that one message will get through to the other aircraft. Besides repeated transmissions, TCAS II uses "jittering" to further randomize the repeated transmissions. Again, because of the lack of coordination between

aircraft, the randomizing of message transmission times increases the odds of the other aircraft's receiving the message.

These transmission interference avoidance methods would be unnecessary if aircraft coordinated the timing and manner of evasive maneuver transmissions as claim 1 requires. The inventors' method of coordinating or synchronizing transmissions permits an aircraft to know when another aircraft will be transmitting evasive maneuver information, thus "thereby preventing simultaneous transmission . . . ." '366 pat., col. 24, lns. 49-50. One could picture communication between aircraft as occurring through a tube in which a message can reach the other aircraft only if the message does not run into another message while in the tube. Using TCAS II, as defendant does, aircraft send repeated messages at random times expecting that one message will reach the other aircraft before that aircraft sends its own message. Using the synchronizing method in claim 1, aircraft have coordinated the time and manner in which the message will be sent. Thus, one aircraft knows when a message will be sent from another aircraft and it will not attempt to send a message at that time. These methods are not the same. As the patent suggests, the synchronization method is intended to be an improvement over the TCAS II method.

No reasonable jury could find that the equipment in defendant's aircraft literally infringes the synchronizing step of claim 1 of the '366 patent. Plaintiff has not explained why the equipment might infringe by equivalence and has waived the argument. Central

States, Southeast and Southwest Areas Pension Fund, 181 F.3d at 808. Accordingly, defendant's request for summary judgment will be granted as to plaintiff's claim that the equipment in defendant's aircraft infringes claim 1 of the '366 patent.

#### D. Defendant's Invalidity Counterclaims

In addition to requesting a determination of non-infringement, defendant has requested that the '194 and '366 patents be declared invalid. Specifically, defendant has asserted a declaratory judgment counterclaim to that effect. The Court of Appeals for the Federal Circuit has held that a district court has the discretion to dismiss invalidity counterclaims upon a grant of summary judgment of non-infringement. Phonometrics, Inc. v. Northern Telecom Inc., 133 F.3d 1459, 1468 (Fed. Cir. 1998); Cardinal Chemical Co. v. Morton Int'l, Inc., 508 U.S. 83, 95 (1993) (in addressing motion for declaratory judgment district court has discretion to decide whether to exercise jurisdiction even when established). It is appropriate for a district court to address only the infringement issue when non-infringement is clear and invalidity is not plainly evident. Id. (citing Leesona Corp. v. United States, 530 F.2d 896, 906 n.9 (Ct. Cl. 1976)).

Discretionary dismissal of defendant's invalidity counterclaims is appropriate in this case because it is clear that the equipment in defendant's aircraft does not infringe the '194 or '366 patents and it is far less clear whether these patents are invalid. A finding of

invalidity would require combining several pieces of prior art and analyzing disputed facts surrounding aircraft collision systems dating back to the early 1990's. It would be an unnecessary expenditure of judicial and party resources to explore these issues at this time, when defendant has not given the court any reason to believe that it is at risk of a future infringement suit concerning the '194 or '366 patents.

Because defendant's motion for summary judgment will be granted on the core issue of non-infringement on clear grounds and because defendants' counterclaim for invalidity is less certain, I exercise my discretionary authority and dismiss defendant's invalidity counterclaim without prejudice.

#### ORDER

IT IS ORDERED that:

1. Defendant United Parcel Service, Inc.'s motion for summary judgment of non-infringement, dkt. #120, is GRANTED; plaintiff WNS Holdings, LLC has failed to show that any reasonable jury could find that:

a. Defendant has infringed claim 7 of plaintiff's U.S. Patent No. 5,355,194 patent and is continuing to infringe it by and through the operation of aircraft implementing ADS-B Out with weight-on-wheels switch indicating ground status;

b. Defendant has infringed claim 1 of plaintiff's U.S. Patent No. 6,314,366

patent and is continuing to infringe it by and through the operation of aircraft implementing both TCAS and ADS-B In;

2. Defendant's counterclaim asserting invalidity is DISMISSED without prejudice;

3. The clerk of court is directed to enter judgment in favor of defendant with respect to plaintiff's claims for infringement of claim 7 of defendant's U.S. Patent No. 5,351,194 and claim 1 of its U.S. Patent No. 6,314,366 and to dismiss the remaining claims and counterclaims without prejudice in accordance with the order entered on March 13, 2009, dkt. #92, and close this case.

Entered this 14<sup>th</sup> day of July, 2009.

BY THE COURT:

*Barbara B. Crabb*

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BARBARA B. CRABB

District Judge