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14  
15 **UNITED STATES DISTRICT COURT**  
16 **SOUTHERN DISTRICT OF CALIFORNIA**

17  
18 AMERICAN GNC  
CORPORATION,

19 Plaintiff,

20 v.

21  
22 HONEYWELL INTERNATIONAL  
23 INC.,

24 Defendant.

Case No. 3:20-cv-2479-BAS-BLM

**FIRST AMENDED COMPLAINT  
FOR PATENT INFRINGEMENT  
AND JURY TRIAL DEMANDED**

1 Plaintiff American GNC Corporation files this First Amended Complaint for patent  
2 infringement under the patent laws of the United States, Title 35 of the United States Code  
3 against Defendant Honeywell International Inc. (“Honeywell”) and alleges as follows:

4 **PARTIES**

5 1. Plaintiff American GNC Corporation (“AGNC”) is a California corporation  
6 with its principal place of business at 888 Easy Street, Simi Valley, California 93065 that  
7 specializes in inventing and applying advanced and innovative technologies to  
8 contemporary problems within the fields of Guidance, Navigation, Control and  
9 Communications (GNCC), Inertial Sensors, Health Monitoring, Intelligent Processing, and  
10 Autonomous Robotics.

11 2. Defendant Honeywell International Inc. is a corporation duly organized and  
12 existing under the laws of Delaware having multiple regular and established places of  
13 business in this District and in the State of California, including but not limited to: 13475  
14 Danielson Street. #100, Poway, California 92064 and/or 2055 Dublin Dr., San Diego,  
15 California 92154. Honeywell can be served with process through its registered agent,  
16 Corporation Service Company, which will do business in California as CSC – Lawyers  
17 Incorporating Service (C1592199), at 251 Little Falls Drive, Wilmington, Delaware,  
18 19808.

19 3. Honeywell commercializes technologies that address some of the world’s  
20 most critical challenges around safety and air travel.

21 4. Honeywell serves customers worldwide with aerospace products and services  
22 and sensing technologies for industries.

23 5. Honeywell’s Aerospace segment is a leading global supplier of products,  
24 software and services for aircrafts that it sells to original equipment manufacturers (OEM)  
25 and other customers in a variety of end markets including: air transport, regional, business  
26 and general aviation aircraft, airlines, aircraft operators and defense and space contractors.  
27 Honeywell’s Aerospace products and services include environmental control systems,

1 integrated avionics, flight safety, navigation hardware, sensors, radar and surveillance  
2 systems, and advanced systems and instruments.

3 6. Honeywell made, used, imported, sold, and/or offered for sale Honeywell  
4 branded products.

5 7. Honeywell makes, uses, imports, sells, and/or offers for sale Honeywell  
6 branded products.

7 **JURISDICTION AND VENUE**

8 8. This is a civil action for patent infringement arising under the Patent Laws of  
9 the United States, 35 U.S.C. § 1, *et seq.*, and more particularly 35 U.S.C. § 271.

10 9. This Court has jurisdiction over the subject matter of this action under 28  
11 U.S.C. §§ 1331 and 1338(a).

12 10. Defendant Honeywell is subject to this Court’s general personal jurisdiction  
13 pursuant to due process and/or the California Long Arm Statute, Cal. Code Civ. Proc §  
14 410.10, due at least to its substantial business conducted in this District, including: (i)  
15 having its regular and established place of business in 13475 Danielson Street. #100,  
16 Poway, California 92064; (ii) having solicited business in the State of California, transacted  
17 business within the State of California and attempted to derive financial benefit from  
18 residents of the State of California in this District, including benefits directly related to the  
19 instant patent infringement causes of action set forth herein; (iii) having placed its products  
20 and services into the stream of commerce throughout the United States and having been  
21 actively engaged in transacting business in California and in this District, and (iv) having  
22 committed the complained of tortious acts in California and in this District.

23 11. Honeywell, directly and/or through subsidiaries and agents (including  
24 distributors, retailers, and others), makes, imports, ships, distributes, offers for sale, sells,  
25 uses, and advertises (including offering products and services through its website,  
26 <https://www.honeywell.com>) its products and/or services in the United States, the State of  
27 California, and the Southern District of California.

1           12. Honeywell, directly and/or through its subsidiaries and agents (including  
2 distributors, retailers, and others), has purposefully and voluntarily placed one or more of  
3 its infringing products and/or services, as described below, into the stream of commerce  
4 with the expectation that they will be purchased and used by consumers in the Southern  
5 District of California. These infringing products and/or services have been and continue  
6 to be purchased and used by consumers in the Southern District of California. Honeywell  
7 has committed acts of patent infringement within the State of California and, more  
8 particularly, within the Southern District of California.

9           13. Honeywell has operated its Poway office in this District in Poway, California  
10 at 13475 Danielson Street. #100, Poway, California 92064 conducting sales, marketing,  
11 and/or service of civil and military avionics and aerospace components including search  
12 and navigation equipment including search, detection, navigation, guidance, aeronautical,  
13 and nautical systems and instruments.<sup>1</sup>

14           14. This Court’s exercise of personal jurisdiction over Honeywell is consistent  
15 with the California Long Arm Statute, Cal. Code Civ. Proc § 410.10, and traditional notions  
16 of fair play and substantial justice.

17           15. Honeywell is also subject to this Court’s specific personal jurisdiction,  
18 because the present dispute arises from, and is related to, Honeywell’s activities in  
19 California and in this District, as described above. These activities include Honeywell  
20 soliciting business from, and transacting business with customers in the State of California  
21 and deriving financial benefit from transactions with customers in the State of California  
22 in this District, including sales of Honeywell products. Honeywell, directly and/or through  
23 subsidiaries and agents (including dealerships, distributors, retailers, and others), makes,  
24 imports, distributes, offers for sale, sells, uses, and advertises (including offering products  
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27 <sup>1</sup> <https://nextdoor.com/pages/honeywell-austin-tx/>;  
28 <https://www.industry.net/listing/1826873/honeywell-vindicator-technologies>

1 and services through its website <https://www.honeywell.com>) its products and/or services  
2 in the United States, the State of California and the Southern District of California.

3 16. Venue is proper in this District under 28 U.S.C. §§ 1391 (b) and (c) and  
4 1400(b). Defendant Honeywell is subject to personal jurisdiction in this District, has  
5 regular and established places of business in this district, has transacted business in this  
6 District, and has committed acts of patent infringement in this District.

7 17. 28 U.S.C. §1400(b) provides that “Any civil action for patent infringement  
8 may be brought in the judicial district where the defendant resides, or where the defendant  
9 has committed acts of infringement and has a regular and established place of business.”  
10 Venue is proper as to Honeywell because it has a regular and established place of business  
11 in this District in Poway, California at 13475 Danielson Street. #100, Poway, California  
12 92064 and has committed acts of infringement here, including making, using, selling, and  
13 offering for sale the accused products.

14 **BACKGROUND**

15 18. AGNC was founded by Ching-Fang Lin, Ph.D. in 1986 as a California  
16 corporation. AGNC’s headquarters are at 888 Easy Street, Simi Valley, California 93065.  
17 AGNC is the owner of record and assignee of 79 issued United States patents, including  
18 the Patents-in-Suit.

19 19. Dr. Lin previously received his doctorate in Computer, Information, and  
20 Control Engineering from the University of Michigan in Ann Arbor.

21 20. Dr. Lin authored over 400 technical publications and was responsible for over  
22 100 patent application filings at AGNC, including as an inventor on each of the Patents-in-  
23 Suit.

24 21. Dr. Lin was responsible for over 1,000 government contract reports and led  
25 the effort to introduce over 30 Guidance, Navigation, Control and Communications  
26 (GNCC) products.

1           22. Dr. Lin’s achievements and awards include: SBA Small Business Person of  
2 the Year 2002, NASA Space Act Award Recognition for Inventions and Scientific and  
3 Technical Exceptional Contributions, Multiple Multiyear NASA Innovative Invention  
4 Award, Donald P. Eckman Award Nominee for Outstanding Control Engineer, Nominee  
5 for the Mechanics and Control of Flight Award, among many others.

6           23. AGNC is an operating high technology company that specializes in inventing  
7 and applying advanced and innovative technologies to contemporary problems within the  
8 fields of Guidance, Navigation, Control and Communications (GNCC), Inertial Sensors,  
9 Health Monitoring, Intelligent Processing, and Autonomous Robotics.

10           24. Since its establishment in 1986, AGNC has been actively involved in  
11 pioneering efforts related to inertial sensors, interruption-free positioning, INS/GNSS  
12 fusion technologies, navigation, and collision avoidance systems that AGNC has invented,  
13 which are disclosed in its extensive patent portfolio. AGNC made the world’s first MEMS  
14 rate integrating gyroscope in 1999, setting the stage for development of its coremicro®  
15 IMU product series.

16           25. AGNC is also among the very first companies to patent micro-  
17 electromechanical (MEMS) Inertial Measurement Unit (“IMU”) technology, which is  
18 commonly found in most handheld consumer electronics such as tablets and smartphones.

19           26. AGNC has developed several positioning and navigation technologies and led  
20 breakthrough efforts during the late 1990’s and early 2000’s for the advancement of inertial  
21 sensors and navigation and collision avoidance systems.

22           27. AGNC’s patented solutions are now found on consumer products, including  
23 smartphones and automobiles, for applications such as motion sensing, context awareness,  
24 image stabilization, navigation, and electronic stability control.

25           28. More information about Plaintiff and its products can be found at AGNC’s  
26 website, [www.americangnc.com](http://www.americangnc.com).

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1 obstacles in in producing positioning and providing ground proximity warnings, for  
2 example.

3 39. The '789 Patent claims' elements and/or combinations of elements overcame,  
4 at the time of invention, the problems with using separate processes and systems for  
5 positioning and ground proximity warning systems.

6 40. On February 24, 2004, U.S. Patent No. 6,697,758 (the "'758 Patent") entitled  
7 "Processing Method for Motion Measurement" was duly and legally issued by the USPTO.

8 41. The '758 Patent claims comprise elements and/or combinations of elements  
9 that constitute an inventive concept and/or were unconventional, not routine, and not well-  
10 understood by a skilled artisan at the time of the invention in order to overcome the  
11 obstacles in processing motion measurements in an inertial measurement unit under  
12 dynamic environments, for example.

13 42. The '758 Patent claims' elements and/or combinations of elements overcame,  
14 at the time of invention, the problems with processing motion measurements in an inertial  
15 measurement unit to obtain highly accurate attitude and heading measurements under  
16 dynamic environments. By utilizing the '758 Patent claims' elements and/or combinations  
17 of elements, a device is able to calculate its attitude and heading relative to its movement  
18 and surroundings.

19 43. On August 5, 2008, U.S. Patent No. 7,409,290 (the "'290 Patent") entitled  
20 "Positioning and Navigation Method and System Thereof" was duly and legally issued by  
21 the USPTO.

22 44. The '290 Patent claims comprise elements and/or combinations of elements  
23 that constitute an inventive concept and/or were unconventional, not routine, and not well-  
24 understood by a skilled artisan at the time of the invention in order to overcome the  
25 obstacles in positioning and navigation systems even in heavy jamming and high dynamic  
26 environments and inside an enclosed structure where GPS signals are not available, for  
27 example.

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1           45.    The '290 Patent claims' elements and/or combinations of elements overcame,  
2 at the time of invention, the problems in positioning and navigation systems. By utilizing  
3 the '290 Patent claims' elements and/or combinations of elements, a device is able to  
4 provide an attitude and heading reference system (AHRS) solution using GPS, an inertial  
5 measurement unit, a Kalman filter and an AHRS processor.

6           46.    AGNC asserts that Honeywell has infringed, directly and by inducement, at  
7 least the following claims of the Patents-in-Suit in this District and elsewhere in the United  
8 States:

- 9           •      '891 Patent – claim 1;
- 10          •      '789 Patent – claim 1;
- 11          •      '758 Patent – claim 1; and
- 12          •      '290 Patent – claim 1.

13   **HONEYWELL'S INFRINGING PRODUCTS**<sup>2</sup>

14           47.    Honeywell has directly infringed claims of the Patents-in-Suit under 35  
15 U.S.C. § 271(a) by making, using, offering for sale, selling, and/or importing the below  
16 accused products in this District and elsewhere in the United States that include the systems  
17 claimed in the Patents-in-Suit and/or by using the methods claimed in the Patents-in-Suit,  
18 including, for example, through Honeywell's control over its products' performance of the

19 \_\_\_\_\_  
20 <sup>2</sup> In this First Amended Complaint, AGNC has revised the Honeywell products that are  
21 specifically identified as accused products, both in this section as well as in the individual  
22 counts of infringement. For example, in AGNC's original Complaint, relying on a  
23 misunderstanding based on what Honeywell's website said, AGNC erroneously included  
24 certain products as accused products. After receiving more information from Honeywell  
25 (including confidential information previously unavailable to AGNC) regarding some of  
26 these products (e.g. the Primus 1000 and TALIN), AGNC learned that some of the  
27 identified products do not meet certain limitations of AGNC's asserted patent claims and,  
28 therefore, do not infringe those claims. As to certain other Honeywell products that were  
in the original Complaint, based on public information, AGNC is presently unaware of  
whether they meet the asserted claims. In an abundance of caution, AGNC therefore also  
removed specific references to those products but reserves the right to seek discovery  
about them during the case.

1 claimed method steps as the products and software designed, built, and programmed by  
2 Honeywell dictate the automatic performance of the claimed method steps once the  
3 products are enabled without any intervention by Honeywell's products' users, and  
4 alternatively, Honeywell's use of said methods during set-up, testing, and demonstration  
5 of its products.

6 48. Honeywell products that practice the method claimed in the '891 Patent  
7 during normal operation ("Accused Ground Proximity Products") include, but are not  
8 limited to, Honeywell products that include a Terrain Alert Warning System and produce  
9 a positioning solution and ground proximity warning solution using GPS, vehicle angular  
10 rate and specific force information, barometric measurements, radio altitude, and a terrain  
11 database, including, but not limited to certain versions of: the Honeywell Primus Epic  
12 integrated avionics system.

13 49. Honeywell products that practice the method claimed in the '789 Patent  
14 during normal operation ("Accused Proximity Products") include, but are not limited to,  
15 Honeywell products that include a Terrain Alert Warning System and produce a  
16 positioning solution and proximity warning solution using GPS, vehicle angular rate and  
17 specific force information, barometric measurements, radio altitude, a terrain database, and  
18 position data of near objects, including, but not limited to certain versions of: the  
19 Honeywell Primus Epic integrated avionics system.

20 50. Honeywell products that practice the method claimed in the '758 Patent  
21 during normal operation ("Accused IMU Products") include, but are not limited to,  
22 Honeywell IMU products that produce attitude and heading angle measurements in an  
23 attitude and heading processor using digital angular increments and digital velocity  
24 increments from an angular increment and velocity increment producer, which converts  
25 angular rate signals from an angular rate producer and acceleration signals from an  
26 acceleration producer into digital angular increments and digital velocity increments,  
27 respectively, including, but not limited to: the Honeywell HGuide n580, HGuide n380.  
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1           51. Honeywell products that infringe the system claimed in the '290 Patent  
2 ("Accused AHRS Positioning Products") include, but are not limited to, Honeywell  
3 GPS/INS products that comprise an IMU, GPS, a Kalman filter, and an Attitude and  
4 Heading Reference System (AHRS), including, but not limited to: the Honeywell HG2170  
5 LASEREF Marine Inertial Navigation System.

6           **HONEYWELL'S KNOWLEDGE OF THE PATENTS-IN-SUIT, HOW THEY**  
7           **ARE INFRINGED, AND CONTINUED INFRINGEMENT DESPITE THAT**  
8           **KNOWLEDGE**

9           52. Honeywell became aware of at least some of AGNC's patents during its own  
10 patent prosecution activities.

11           53. Honeywell has been aware of the '891 Patent at least as early as April 1, 2002  
12 when the '891 Patent was cited during the prosecution of Defendant Honeywell  
13 International Inc.'s 10/114,883 application. The '891 Patent has also been cited during the  
14 prosecution of other Honeywell patent applications, including 2007/0282529 (issued as  
15 7,739,045); 11/235,464 (issued as 7,145,501); 09/661,674 (issued as 6,922,703); and  
16 2005/0125141 (issued as 7,248,964).

17           54. Honeywell has been aware of the '789 Patent at least as early as February 21,  
18 2007 when the '789 Patent was cited during the prosecution of Defendant Honeywell  
19 International Inc.'s 11/163,744 application. The '789 Patent or the application that issued  
20 as the '789 Patent have also been cited during the prosecution of other Honeywell patent  
21 applications, including 2006/0208941 (issued as 7,889,125); 2016/0247406 (issued as  
22 9,547,993); 2010/0286851 (issued as 8,483,889); 2008/0180351 (issued as 10,168,179);  
23 and 2018/0158343 (issued as 10,176,721).

24           55. Honeywell has been aware of the '758 Patent at least as early as February 3,  
25 2012 when the '758 Patent was cited during the prosecution of Defendant Honeywell  
26 International Inc.'s 2011/0127365 application that issued as 8,558,150.

27           56. Honeywell has been aware of the '290 Patent at least as early as November  
28 21, 2006 when the publication of the patent application that became the '290 Patent

1 (2006/0208941) was cited during the prosecution of Defendant Honeywell International  
2 Inc.'s 11/080,345 application. The '290 Patent has also been cited during the prosecution  
3 of other Honeywell patent applications, including 15/461,028 (issued as 10,048,074);  
4 2010/0088064 (issued as 7,840,381); and 2011/0137560 (issued as 8,209,117).

5 57. Honeywell has been aware of the AGNC patents no later than September 10,  
6 2020, when a letter was emailed to Mr. John Beninati, VP & Chief IP Counsel; General  
7 Counsel, Technology and HTS, Honeywell International Inc. from Global IP Law Group,  
8 LLC, on behalf of AGNC.

9 58. The September 10, 2020 letter identified the Patents-in-Suit and the  
10 Honeywell products and methods that AGNC contends infringes them.

11 59. Honeywell did not respond to AGNC's September 10, 2020 email or letter.

12 60. On September 28, October 7, and October 13, 2020, Global IP Law Group,  
13 LLC, on behalf of AGNC, again emailed Honeywell in an attempt to begin a dialog toward  
14 resolving AGNC's patent infringement claims.

15 61. Honeywell did not respond to AGNC's September 28, October 7, or October  
16 13, 2020 emails.

17 62. On October 22, 2020, AGNC, through Global IP Law Group, LLC, once again  
18 emailed Honeywell in an effort to resolve AGNC's patent infringement claims.

19 63. Mr. Beninati responded to the Oct. 22 email indicating that Ms. Naomi  
20 Voegtii, VP, Chief Intellectual Property Counsel of Honeywell Aerospace (who was cc'd  
21 on the email) will review AGNC's allegations.

22 64. Global IP Law Group, LLC, on behalf of AGNC responded to Mr. Beninati's  
23 email requesting that Ms. Voegtii identify when she is able to discuss after reviewing the  
24 September 10, 2020 letter and claims charts.

25 65. On October 23, 2020, Ms. Voegtii responded that her team is reviewing the  
26 information and that they would get back to AGNC shortly.

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1           66. On November 2, 2020, Ms. Voegtii again emailed AGNC’s counsel, Global  
2 IP Law Group, LLC informing that the coming Friday is her last day at Honeywell and to  
3 direct AGNC’s inquiries to Mr. Beninati (who was cc’d on the email).

4           67. On November 2, 2020, AGNC’s counsel, Global IP Law Group, LLC  
5 responded to Ms. Voegtii’s email asking Mr. Beninati (who was cc’d on the email) to  
6 identify the new proper point of contact for AGNC’s patent infringement claim.

7           68. Honeywell has not responded to AGNC’s November 2, 2020 email, nor has it  
8 identified the point of contact handling AGNC’s patent infringement claim.

9           69. On November 19, 2020, AGNC’s counsel, Global IP Law Group, LLC  
10 emailed Mr. Beninati asking to set up a call to discuss resolution of AGNC’s patent  
11 infringement claim.

12           70. Honeywell has not responded to AGNC’s November 19, 2020 email.

13           71. Honeywell has not agreed to enter into a licensing agreement with AGNC.

14           72. Honeywell has not provided AGNC any licensing proposal.

15           73. Prior to AGNC filing this lawsuit, Honeywell had never communicated to  
16 AGNC any argument that the Asserted Claims of the Patents-in-Suit are invalid for any  
17 reason.

18           74. Prior to AGNC filing this lawsuit, Honeywell has never communicated to  
19 AGNC any argument that it does not infringe the Asserted Claims of the Patents-in-Suit.

20           75. Despite knowledge of the Patents-in-Suit and knowledge of the manner in  
21 which the Patents-in-Suit are infringed as demonstrated in the provided claim charts,  
22 Honeywell has continued to infringe and induce the infringement of the Patents-in-Suit.

23           **COUNT I: INFRINGEMENT OF PAT. 6,157,891 - CLAIM 1**

24           76. AGNC reasserts and realleges paragraphs 1 through 75 of this Amended  
25 Complaint as though set forth fully here.

26           77. Claim 1 of the ’891 Patent provides:  
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1 2	Preamble to Claim 1	A positioning and ground proximity warning method for vehicle, comprising the steps of:
3 4 5 6	Element A	(a) receiving global positioning system information for deriving position, velocity and time information or pseudorange and delta range measurements of a global positioning system, and outputting said global positioning system information to an integrated positioning/ground proximity warning system processor;
7 8 9 10	Element B	(b) receiving vehicle angular rate and specific force information for computing an inertial navigation solution, including position, velocity, and attitude of said vehicle, by solving inertial navigation equations, and outputting said inertial navigation solution to said integrated positioning/ground proximity warning processor;
11 12 13	Element C	(c) measuring air pressure, and computing barometric measurements which is output to said integrated positioning/ground proximity warning processor;
14 15 16	Element D	(d) measuring time delay between transmission and reception of a radio signal from a terrain surface, and computing radio altitude measurement which is output to said integrated positioning/ground proximity warning processor;
17 18 19	Element E	(e) accessing a terrain database for obtaining current vehicle position and surrounding terrain height data which is output to said integrated positioning/ground proximity warning processor; and
20 21 22 23 24	Element F	(f) receiving said position, velocity and time information or said pseudorange and delta range measurements of said global positioning system, said inertial navigation solution, said radio altitude measurement, and said current vehicle position and surrounding terrain height data, and computing optimal positioning solution data and optimal ground proximity warning solution data.

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78. Honeywell has made, used, sold, imported, and/or offered for sale products that include a Terrain Alert Warning System and produce a positioning solution and ground

1 proximity warning solution using GPS, vehicle angular rate and specific force information,  
2 barometric measurements, radio altitude, and a terrain database, the Accused Ground  
3 Proximity Products, that practice each and every element of claim 1 of the '891 Patent.

4 79. Alternatively, the use of the Accused Ground Proximity Products meets each  
5 and every element of claim 1 of the '891 Patent.

6 80. The Accused Ground Proximity Products include, but are not limited to, for  
7 example, certain versions of the Honeywell Primus Epic integrated avionics system.

8 81. The Accused Ground Proximity Products perform a positioning and ground  
9 proximity warning method for vehicle.

10 82. For example, the Primus Epic comprises a Terrain Alert Warning System  
11 (TAWS) that gives situational awareness with respect to terrain and known obstacles and  
12 terrain/obstacle warning and advisory callouts.

13 83. The Accused Ground Proximity Products receive global positioning system  
14 (GPS) information for deriving position, velocity, and time information or pseudorange  
15 and delta range measurements of a global positioning system and output the global  
16 positioning system information to an integrated positioning/ground proximity warning  
17 system processor.

18 84. For example, the Primus Epic comprises a Terrain Alert Warning System  
19 (TAWS).

20 85. The Primus Epic's TAWS uses aircraft inputs including GPS signal quality,  
21 GPS position, and GPS altitude.

22 86. For example, the Primus Epic has 12-channel GPS receivers that receive the  
23 transmissions from the NAVSTAR GPS satellite constellation.

24 87. The output from the Primus Epic's GPS modules includes three dimensional  
25 aircraft position and velocities, Pseudo range, and Delta range data.

26 88. The Accused Ground Proximity Products receive vehicle angular rate and  
27 specific force information for computing an inertial navigation solution, including position,  
28

1 velocity, and attitude of the vehicle, by solving inertial navigation equations, and outputting  
2 the inertial navigation solution to the integrated positioning/ground proximity warning  
3 processor.

4 89. For example, the Primus Epic is equipped with two AHRS.

5 90. Each AHRS is an all attitude inertial sensor system using gyros and micro-  
6 machined accelerometers to compute the attitude, heading, and flight dynamic information  
7 of the aircraft.

8 91. The gyros and accelerometers measure rates of change in the pitch, roll, and  
9 yaw.

10 92. The AHRS is able to give inertial altitude and vertical speed.

11 93. For example, the Primus Epic is also equipped with an Automatic Flight  
12 Control System (AFCS).

13 94. The AHRS transmits pitch angle, roll angle, magnetic heading, body pitch  
14 rate, body roll rate, body yaw rate, body and earth axis longitudinal acceleration, body and  
15 earth axis lateral acceleration, body and earth axis normal acceleration, and hybrid along  
16 and across heading velocities and accelerations to the AFCS.

17 95. The Primus Epic uses inertial velocities to extrapolate the navigation solution  
18 comprising position and velocity.

19 96. The inertial velocities must be integrated from specific forces.

20 97. The vehicle angular rates must be used to derive vehicle angles that provide  
21 an orientation reference to the inertial velocities.

22 98. Therefore, both vehicle angular rate and specific force information are used  
23 to provide an inertial navigation solution with position and velocity.

24 99. The Primus Epic's AHRS, based on fiber optic gyros (for angular rate) and  
25 micro-mechanical accelerometers (for specific force), provides the attitude information.

26 100. The Primus Epic's TAWS uses aircraft inputs including roll and pitch attitude  
27 and magnetic heading.  
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1           101. The Accused Ground Proximity Products measure air pressure and compute  
2 barometric measurements that are output to the integrated positioning/ground proximity  
3 warning processor.

4           102. For example, the Primus Epic comprises a barometric altimeter that measures  
5 air pressure and shows barometric altitude.

6           103. The Primus Epic's TAWS uses aircraft inputs including a Baro altimeter.

7           104. The Primus Epic's TAWS uses barometric pressure and barometric altitude.

8           105. The Accused Ground Proximity Products measure the time delay between  
9 transmission and reception of a radio signal from a terrain surface and compute radio  
10 altitude measurements that are output to the integrated positioning/ground proximity  
11 warning processor.

12          106. For example, the Primus Epic comprises a radio altimeter/altitude system.

13          107. Each radio altimeter comprises a receiver/transmitter and two antennas.

14          108. The radio altimeter indicates altitude of the aircraft's height above ground  
15 level or whatever might be directly below the aircraft.

16          109. The radio altimeter measures the altitude by transmitting radio waves  
17 downwards from the bottom of the aircraft and reading the received reflected signals.

18          110. The time lapse between transmitted and received signals is then used to  
19 calculate the height above what is directly beneath the aircraft.

20          111. The Primus Epic's TAWS uses aircraft inputs including radio altitude.

21          112. The Accused Ground Proximity Products access a terrain database to obtain  
22 the current vehicle position and surrounding terrain height data that is output to the  
23 integrated positioning/ground proximity warning processor.

24          113. For example, the Primus Epic accesses a terrain database.

25          114. The Primus Epic's TAWS always knows where the aircraft is relative to the  
26 ground.

1 115. The TAWS system continually compares the GPS position to the terrain  
2 database.

3 116. The TAWS system compares the position to the terrain database in order to  
4 produce a virtual picture that can be displayed to give situational awareness to the pilot.

5 117. TAWS gives the pilot a display of the aircraft position relative to surrounding  
6 terrain.

7 118. The terrain database is loaded from a PCMCIA card. The database card  
8 comprises all of the terrain data used by TAWS.

9 119. In addition to showing terrain ahead of the aircraft, the TAWS shows altitude,  
10 range in NM, and the elevations of the highest and lowest terrain features shown on the  
11 display.

12 120. TAWS uses inputs including the internal terrain database to predict a potential  
13 conflict between the aircraft flight path and terrain.

14 121. The Accused Ground Proximity Products receive the position, velocity and  
15 time information or the pseudorange and delta range measurements of the global  
16 positioning system, the inertial navigation solution, the radio altitude measurement, and  
17 the current vehicle position and surrounding terrain height data, and computes optimal  
18 positioning solution data and optimal ground proximity warning solution data.

19 122. For example, the Primus Epic's TAWS uses aircraft inputs including radio  
20 altitude, baro altimeter, roll and pitch attitude, magnetic heading, GPS signal quality, GPS  
21 position, GPS altitude, and display range.

22 123. The TAWS uses an internal terrain database to predict a potential conflict  
23 between the aircraft flight path and terrain.

24 124. If a terrain conflict exists, the TAWS sounds an audio caution or warning alert  
25 and shows a display of the situation.

26 125. Using GPS, radio and barometric altitude, airspeed, altitude rate, pitch and  
27 roll attitude, magnetic heading and temperature data in combination with its various  
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1 database information (including a terrain database), the TAWS gives the pilot a display of  
2 the aircraft position relative to surrounding terrain, giving enhanced situational awareness  
3 to the pilot.

4 126. Direct infringement of claim 1 of the '891 Patent occurred when Honeywell  
5 practiced the claimed method through its control over the Accused Ground Proximity  
6 Products' performance of the claimed method steps. Honeywell designed, built, and  
7 programmed the Accused Ground Proximity Products and their software that dictate the  
8 automatic performance of the claimed method steps once the products are enabled without  
9 any intervention by Honeywell's products' users.

10 127. Alternatively, should the Court find that a user of the Accused Ground  
11 Proximity Products is the direct infringer, Honeywell directly infringed claim 1 of the '891  
12 Patent through its use of the method during set-up, testing, and demonstration of the  
13 Accused Ground Proximity Products.

14 128. Honeywell directly infringed claim 1 of the '891 Patent by using the claimed  
15 method through its control over the Accused Ground Proximity Products which, by design,  
16 practice the claimed process.

17 129. Honeywell has had actual knowledge of the '891 Patent since at least April 1,  
18 2002.

19 **COUNT II: INFRINGEMENT OF PAT. 6,480,789 - CLAIM 1**

20 130. AGNC reasserts and realleges paragraphs 1 through 75 of this Amended  
21 Complaint as though set forth fully here.

22 131. Claim 1 of the '789 Patent provides:  
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1 2	Preamble of Claim 1	A positioning and proximity warning method, comprising the steps of:
3 4 5 6	Element A	(a) receiving global positioning system signals for deriving position, velocity and time information or pseudorange and delta range measurements of a global positioning system, and outputting said global positioning system signals to an integrated positioning/ground proximity warning system processor;
7 8 9 10 11	Element B	(b) receiving vehicle angular rate and specific force information for computing an inertial navigation solution, including position, velocity, and attitude of said vehicle, by solving inertial navigation equations, and outputting said inertial navigation solution to said integrated positioning/ground proximity warning processor;
12 13	Element C	(c) measuring air pressure, and computing barometric measurements which is output to said integrated positioning/ground proximity warning processor;
14 15 16 17	Element D	(d) measuring time delay between transmission and reception a radio signal from a terrain surface, and computing radio altitude measurement which is output to said integrated positioning/ground proximity warning processor;
18 19	Element E	(e) accessing a terrain database for obtaining current vehicle position and surrounding terrain height data which is output to said integrated positioning/ground proximity warning processor;
20 21 22 23 24 25	Element F	(f) receiving said position, velocity and time information or said pseudorange and delta range measurements of said global positioning system, said inertial navigation solution, said radio altitude measurement, said radio altitude measurement, and said current vehicle position and surrounding terrain height data, and computing optimal positioning solution data and optimal ground proximity warning solution data; and
26 27	Element G	(g) receiving optimal positioning solution and position data of near objects and determining a optimal proximity warning solution with said near objects.

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2 132. Honeywell has manufactured, used, sold, imported, and/or offered for sale  
3 products that include a Terrain Alert Warning System and produce a positioning solution  
4 and proximity warning solution using GPS, vehicle angular rate and specific force  
5 information, barometric measurements, radio altitude, a terrain database, and position data  
6 of near objects, the Accused Proximity Products, that practice each and every element of  
7 claim 1 of the '789 Patent.

8 133. Alternatively, the use of the Accused Proximity Products meets each and  
9 every element of claim 1 of the '789 Patent.

10 134. The Accused Proximity Products include, but are not limited to, for example,  
11 certain versions of the Honeywell Primus Epic integrated avionics system.

12 135. The Accused Proximity Products perform a positioning and proximity  
13 warning method.

14 136. For example, the Primus Epic comprises a Terrain Alert Warning System  
15 (TAWS) that gives situational awareness with respect to terrain and known obstacles and  
16 terrain/obstacle warning and advisory callouts.

17 137. The Accused Proximity Products receive global positioning system signals for  
18 deriving position, velocity and time information or pseudorange and delta range  
19 measurements of a global positioning system, and output the global positioning system  
20 signals to an integrated positioning/ground proximity warning system processor.

21 138. For example, the Primus Epic Integrated Avionics and Automatic Flight  
22 Control System comprises a GPS receiver that receives the transmissions from the  
23 NAVSTAR GPS satellite constellation.

24 139. The GPS modules output three dimensional aircraft position and velocities,  
25 pseudo range, and delta range data.

26 140. For example, the Primus Epic comprises a Terrain Alert Warning System  
27 (TAWS).  
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1 141. The Primus Epic’s TAWS uses aircraft inputs including GPS signal quality,  
2 GPS position, and GPS altitude.

3 142. The Accused Proximity Products receive vehicle angular rate and specific  
4 force information for computing an inertial navigation solution, including position,  
5 velocity, and attitude of said vehicle, by solving inertial navigation equations, and output  
6 the inertial navigation solution to the integrated positioning/ground proximity warning  
7 processor.

8 143. For example, the Primus Epic comprises two attitude and heading reference  
9 systems (AHRS).

10 144. The AHRS is an all attitude, inertial sensor system that uses gyroscopes and  
11 micro-machines accelerometers to compute the attitude, heading and flight dynamic  
12 information of the aircraft.

13 145. The gyroscopes and accelerometers measure rates of change in pitch, roll, and  
14 yaw.

15 146. The AHRS is able to give inertial altitude and vertical speed.

16 147. For example, the Primus Epic is also equipped with an Automatic Flight  
17 Control System (AFCS).

18 148. The AHRS transmits pitch angle, roll angle, magnetic heading, body pitch  
19 rate, body roll rate, body yaw rate, body and earth axis longitudinal acceleration, body and  
20 earth axis lateral acceleration, body and earth axis normal acceleration, and hybrid along  
21 and across heading velocities and accelerations to the AFCS.

22 149. The Primus Epic uses inertial velocities to extrapolate the navigation solution  
23 comprising position and velocity.

24 150. The inertial velocities must be integrated from specific forces.

25 151. The vehicle angular rates must be used to derive vehicle angles that provide  
26 an orientation reference to the inertial velocities.

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1 152. Therefore, both vehicle angular rate and specific force information are used  
2 to provide an inertial navigation solution with position and velocity.

3 153. The Primus Epic's AHRS, based on fiber optic gyros (for angular rate) and  
4 micro-mechanical accelerometers (for specific force), provides the attitude information.

5 154. The Primus Epic's TAWS uses aircraft inputs including roll and pitch attitude  
6 and magnetic heading.

7 155. The Accused Proximity Products measure air pressure and compute  
8 barometric measurements that are output to the integrated positioning/ground proximity  
9 warning processor.

10 156. For example, the Primus Epic comprises a barometric altimeter that measures  
11 air pressure and shows barometric altitude.

12 157. The Primus Epic's TAWS uses aircraft inputs including a Baro altimeter.

13 158. The Primus Epic's TAWS uses barometric pressure and barometric altitude.

14 159. The Accused Proximity Products measure the time delay between  
15 transmission and reception of a radio signal from a terrain surface and compute a radio  
16 altitude measurement that is output to the integrated positioning/ground proximity warning  
17 processor.

18 160. For example, the Primus Epic comprises a radio altimeter/altitude system.

19 161. Each radio altimeter comprises a receiver/transmitter and two antennas.

20 162. The radio altimeter indicates altitude of the aircraft's height above ground  
21 level or whatever might be directly below the aircraft.

22 163. The radio altimeter measures the altitude by transmitting radio waves  
23 downwards from the bottom of the aircraft and reading the received reflected signals.

24 164. The time lapse between transmitted and received signals is then used to  
25 calculate the height above what is directly beneath the aircraft.

26 165. The Primus Epic's TAWS uses aircraft inputs including radio altitude.  
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1 166. The Accused Proximity Products access a terrain database for obtaining  
2 current vehicle position and surrounding terrain height data that are output to the integrated  
3 positioning/ground proximity warning processor.

4 167. For example, the Primus Epic accesses a terrain database.

5 168. The Primus Epic's TAWS always knows where the aircraft is relative to the  
6 ground.

7 169. The TAWS system continually compares the GPS position to the terrain  
8 database.

9 170. The TAWS system compares the position to the terrain database in order to  
10 produce a virtual picture that can be displayed to give situational awareness to the pilot.

11 171. TAWS gives the pilot a display of the aircraft position relative to surrounding  
12 terrain.

13 172. The terrain database is loaded from a PCMCIA card. The database card  
14 comprises all of the terrain data used by TAWS.

15 173. In addition to showing terrain ahead of the aircraft, the TAWS shows altitude,  
16 range in NM, and the elevations of the highest and lowest terrain features shown on the  
17 display.

18 174. TAWS uses inputs including the internal terrain database to predict a potential  
19 conflict between the aircraft flight path and terrain.

20 175. The Accused Proximity Products receive the position, velocity and time  
21 information or the pseudorange and delta range measurements of the global positioning  
22 system, the inertial navigation solution, the radio altitude measurement, and the current  
23 vehicle position and surrounding terrain height data, and compute optimal positioning  
24 solution data and optimal ground proximity warning solution data.

25 176. For example, the Primus Epic's TAWS uses aircraft inputs including radio  
26 altitude, baro altimeter, roll and pitch attitude, magnetic heading, GPS signal quality, GPS  
27 position, GPS altitude, and display range.

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1 177. The TAWS uses an internal terrain database to predict a potential conflict  
2 between the aircraft flight path and terrain.

3 178. If a terrain conflict exists, the TAWS sounds an audio caution or warning alert  
4 and shows a display of the situation.

5 179. Using GPS, radio and barometric altitude, airspeed, altitude rate, pitch and  
6 roll attitude, magnetic heading and temperature data in combination with its various  
7 database information (including a terrain database), the TAWS gives the pilot a display of  
8 the aircraft position relative to surrounding terrain, giving enhanced situational awareness  
9 to the pilot.

10 180. The Accused Proximity Products receive optimal positioning solution and  
11 position data of near objects and determine an optimal proximity warning solution with  
12 near objects.

13 181. For example, the Primus Epic's TAWS uses internal terrain, obstacles, and  
14 airport databases to predict a potential conflict between the aircraft flight path and terrain  
15 or an obstacle.

16 182. If a terrain or obstacle conflict exists, the TAWS sounds an audio caution or  
17 warning alert and shows a display of the situation.

18 183. For example, when the TAWS look-ahead function detects a terrain or  
19 obstacle threat approximately 30 seconds ahead of the aircraft, an aural alert CAUTION  
20 TERRAIN, CAUTION TERRAIN (or CAUTION OBSTACLE, CAUTION OBSTACLE)  
21 is given and a bright solid yellow threat area is shown on the terrain display.

22 184. Direct infringement of claim 1 of the '789 Patent occurred when Honeywell  
23 practiced the claimed method through its control over the Accused Proximity Products'  
24 performance of the claimed method steps. Honeywell designed, built, and programmed  
25 the Accused Proximity Products and their software that dictate the automatic performance  
26 of the claimed method steps once the products are enabled without any intervention by  
27 Honeywell's products' users.  
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1 185. Alternatively, should the Court find that a user of the Accused Proximity  
 2 Products is the direct infringer, Honeywell directly infringed claim 1 of the '789 Patent  
 3 through its use of the method during set-up, testing, and demonstration of the Accused  
 4 Proximity Products.

5 186. Honeywell directly infringed claim 1 of the '789 Patent by using the claimed  
 6 method through its control over the Accused Proximity Products which, by design, practice  
 7 the claimed process.

8 187. Honeywell has had actual knowledge of the '789 Patent since at least February  
 9 21, 2007.

10 **COUNT III: INFRINGEMENT OF PAT. 6,697,758 - CLAIM 1**

11 188. AGNC reasserts and realleges paragraphs 1 through 75 of this Amended  
 12 Complaint as though set forth fully here.

13 189. Claim 1 of the '758 Patent provides:

Preamble of Claim 1	A processing method for motion measurement, comprising the steps of:
Element A	(a) producing three-axis angular rate signals by an angular rate producer and three-axis acceleration signals by an acceleration producer;
Element B	(b) converting said three-axis angular rate signals into digital angular increments and converting said three-axis acceleration signals into digital velocity increments in an angular increment and velocity increment producer; and
Element C	(c) computing attitude and heading angle measurements using said three-axis digital angular increments and said three-axis velocity increments in an attitude and heading processor.

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 24 190. Honeywell has manufactured, used, sold, imported, and/or offered for sale the  
 25 Accused IMU Products that that produce attitude and heading angle measurements in an  
 26 attitude and heading processor using digital angular increments and digital velocity  
 27 increments from an angular increment and velocity increment producer, which converts  
 28

1 angular rate signals from an angular rate producer and acceleration signals from an  
2 acceleration producer into digital angular increments and digital velocity increments,  
3 respectively, that practice each and every element of claim 1 of the '758 Patent.

4 191. Alternatively, the use of the Accused IMU Products meets each and every  
5 element of claim 1 of the '758 Patent.

6 192. The Accused IMU Products include, but are not limited to, for example, the  
7 Honeywell HGuide n580, HGuide n380.

8 193. The Accused IMU Products perform a processing method for motion  
9 measurement.

10 194. For example, the HGuide n580 measures time stamped position, velocity,  
11 angular rate, linear acceleration, roll, pitch, and heading.

12 195. The Accused IMU Products produce three-axis angular rate signals by an  
13 angular rate producer and three-axis acceleration signals by an acceleration producer.

14 196. For example, the HGuide n580 comprises the Honeywell HG4930 IMU.

15 197. The HG4930 produces three-axis angular rate and three-axis acceleration  
16 signals.

17 198. For example, the HG4930 measures angular rates and linear acceleration in  
18 6 degrees of freedom using gyroscopes and accelerometers.

19 199. The Accused IMU Products convert the three-axis angular rate signals into  
20 digital angular increments and convert the three-axis acceleration signals into digital  
21 velocity increments in an angular increment and velocity increment producer.

22 200. For example, the HGuide n580's HG4930 IMU converts the three-axis  
23 angular rate and three-axis acceleration signals into compensated incremental angle and  
24 velocity data.

25 201. The HG4930 comprises the electronics and software necessary to convert  
26 the angular rate and acceleration signals.

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1           202. The HG4930’s navigation data consists of incremental (or “delta”) angles  
2 and velocities.

3           203. The Accused IMU Products compute attitude and heading angle  
4 measurements using the three-axis digital angular increments and the three-axis velocity  
5 increments in an attitude and heading processor.

6           204. For example, the HGuide n580 computes roll and pitch (attitude) as well as  
7 heading information based on the measurements from the HG4930 IMU, including the  
8 incremental angle and velocity data.

9           205. For example, the HGuide n580 is a self-contained, all attitude Inertial/GNSS  
10 Navigator that uses navigation algorithms to compute the roll, pitch, and heading  
11 information.

12           206. Direct infringement of claim 1 of the ’758 Patent occurred when Honeywell  
13 practiced the claimed method through its control over the Accused IMU Products’  
14 performance of the claimed method steps. Honeywell designed, built, and programmed  
15 the Accused IMU Products and their software that dictate the automatic performance of the  
16 claimed method steps once the products are enabled without any intervention by  
17 Honeywell’s products’ users.

18           207. Alternatively, should the Court find that a user of the Accused IMU Products  
19 is the direct infringer, Honeywell directly infringed claim 1 of the ’758 Patent through its  
20 use of the method during set-up, testing, and demonstration of the Accused IMU Products.

21           208. Honeywell directly infringed claim 1 of the ’758 Patent by using the claimed  
22 method through its control over the Accused IMU Products which, by design, practice the  
23 claimed process.

24           209. Honeywell has had actual knowledge of the ’758 Patent since at least  
25 February 3, 2012.

**COUNT IV: INFRINGEMENT OF PAT. 7,409,290 - CLAIM 1**

210. AGNC reasserts and realleges paragraphs 1 through 75 of this Amended Complaint as though set forth fully here.

211. Claim 1 of the '290 Patent provides:

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1 2	Preamble of Claim 1	A positioning and navigation system, comprising:
3 4	Element A	an IMU (inertial measurement unit) providing inertial measurements including body angular rates and specific forces;
5 6 7	Element B	a GPS (Global Positioning System) processor receiving GPS satellite signals to derive position and velocity information and GPS raw measurements including pseudorange, carrier phase, and Doppler shift; and
8	Element C	a central navigation processor which comprises:
9 10 11 12	Element D	an INS (Inertial Navigation System) processor receiving said inertial measurements, including said body angular rates and said specific forces, for computing an inertial navigation solution which are position, velocity, acceleration, and attitude of a carrier carrying said positioning and navigation system;
13 14 15 16 17 18	Element E	a Kalman filter receiving said GPS raw measurements and said inertial navigation solution derived from said INS processor which is blended with said GPS raw measurements to derive a plurality of INS corrections and GPS corrections, wherein said INS corrections are fed back from said Kalman filter to said INS processor to correct said inertial navigation solution, wherein said Kalman filter sends out a dual antenna GPS attitude determination; and
19 20 21 22 23	Element F	an AHRS (Attitude and Heading Reference System) processor receiving said inertial measurements from said IMU which is blended with said dual antenna GPS attitude determination from said Kalman filter for computing an AHRS solution which are attitude and heading data of said carrier and being outputted as navigation solution.

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25 212. Honeywell has manufactured, used, sold, imported, and/or offered for sale  
26 GPS/INS products that comprise an IMU, GPS, a Kalman filter, and an Attitude and  
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1 Heading Reference System (AHRS), the Accused AHRS Positioning Products, that meet  
2 each and every element of claim 1 of the '290 Patent.

3 213. Honeywell manufactures, uses, sells, imports, and/or offers for sale the  
4 Accused AHRS Positioning Products that meet each and every element of claim 1 of the  
5 '290 Patent.

6 214. The Accused AHRS Positioning Products include, but are not limited to, for  
7 example, the Honeywell HG2170 LASEREF Marine Inertial Navigation System.

8 215. The Accused AHRS Positioning Products comprise a positioning and  
9 navigation system.

10 216. For example, the HG2170 LASEREF is a platform with high position,  
11 accuracy, integrity, continuity and availability.

12 217. For example, the HG2170 LASEREF Marine Inertial Navigation System  
13 (INS) seamlessly integrates inertial measurements with position aiding sources from up to  
14 two GNSS and Acoustic System to provide a robust and reliable position.

15 218. The HG2170 LASEREF Marine INS provides long running navigation.

16 219. The Accused AHRS Positioning Products comprise an IMU (inertial  
17 measurement unit) providing inertial measurements including body angular rates and  
18 specific forces.

19 220. For example, the HG2170 LASEREF Marine INS provides high accuracy  
20 position, heading, pitch, roll, rates, and heave data.

21 221. The HG2170 LASEREF Marine INS integrates inertial measurements with  
22 position aiding sources.

23 222. The HG2170 LASEREF Marine INS maintains highly accurate positioning,  
24 even while aiding sources are temporarily lost or interrupted.

25 223. The HG2170 LASEREF provides navigation by using gyroscopes and  
26 accelerometers.

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1           224. On information and belief, the HG2170 LASEREF Marine INS comprise  
2 three accelerometers and three gyroscopes that provide inertial measurements including  
3 body angular rates and specific forces.

4           225. The HG2170 LASEREF provides body frame longitudinal, lateral, and  
5 normal accelerations.

6           226. The HG2170 LASEREF provides body frame pitch, roll, and yaw rates.

7           227. The Accused AHRS Positioning Products comprise a GPS (Global  
8 Positioning System) processor receiving GPS satellite signals to derive position and  
9 velocity information and GPS raw measurements including pseudorange, carrier phase, and  
10 Doppler shift.

11           228. For example, the HG2170 LASEREF Marine INS receives raw GPS data  
12 (satellite measurement and autonomous data including pseudo range) from GPS receivers.

13           229. The HG2170 LASEREF Marine INS provides position (e.g. latitude and  
14 longitude) and velocity information.

15           230. On information and belief, the HG2170 LASEREF Marine INS receives raw  
16 GPS data that includes pseudorange, carrier phase, and Doppler shift.

17           231. The GPS signals comprise the signal codes and carrier phases of the signals.

18           232. The output data of the GPS modules includes three dimensional aircraft  
19 position and velocities, pseudo range, and delta range data (e.g. Doppler shift).

20           233. The Accused AHRS Positioning Products comprise a central navigation  
21 processor that comprises an INS (Inertial Navigation System) processor receiving the  
22 inertial measurements, including the body angular rates and the specific forces, for  
23 computing an inertial navigation solution which includes position, velocity, acceleration,  
24 and attitude of a carrier carrying the positioning and navigation system.

25           234. For example, the HG2170 LASEREF Marine INS provides high-accuracy  
26 position, heading, pitch, roll, rates, and heave data.

27           235. The HG2170 LASEREF Marine INS provides long running navigation.  
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1           236. On information and belief, the HG2170 LASEREF Marine INS obtains a  
2 navigation solution that includes position, velocity, acceleration, and attitude.

3           237. The Accused AHRS Positioning Products comprise a central navigation  
4 processor that comprises a Kalman filter receiving the GPS raw measurements and the  
5 inertial navigation solution derived from the INS processor which is blended with the GPS  
6 raw measurements to derive a plurality of INS corrections and GPS corrections, wherein  
7 the INS corrections are fed back from the Kalman filter to the INS processor to correct the  
8 inertial navigation solution, wherein the Kalman filter sends out a dual antenna GPS  
9 attitude determination.

10           238. For example, the HG2170 LASEREF Marine INS utilizes a Hybrid Kalman  
11 filter to seamlessly integrate inertial measurements with position aiding sources from up to  
12 two GNSS and an Acoustic System to provide a robust and reliable position.

13           239. The Hybrid Kalman filter has low drift rates.

14           240. The Hybrid Kalman filter utilizes proprietary algorithms that improve  
15 performance.

16           241. On information and belief, the HG2170 LASEREF Marine INS blends  
17 received GPS autonomous Pseudo Range with Inertial data in a Kalman filter to achieve  
18 optimal position, velocity, and attitude performance.

19           242. In the HG2170 LASEREF Marine INS, all satellites and sensors are  
20 individually calibrated in the Kalman filter.

21           243. Thus, the sensors (and therefore, the INS) are corrected and the GPS is  
22 corrected.

23           244. The HG2170 LASEREF Marine INS also tracks Integrity Data of the data  
24 transmitted by the two GPS receiver systems (e.g. dual antenna GPS).

25           245. The HG2170 LASEREF Marine INS outputs attitude.

26           246. The HG2170 LASEREF Marine INS assures the integrity of the GPS data.  
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1 247. The Accused AHRS Positioning Products comprise a central navigation  
2 processor that comprises an AHRS (Attitude and Heading Reference System) processor  
3 receiving the inertial measurements from the IMU which are blended with the dual antenna  
4 GPS attitude determination from the Kalman filter for computing an AHRS solution which  
5 includes attitude and heading data of the carrier and being outputted as navigation solution.

6 248. For example, the HG2170 LASEREF Marine family of products are platforms  
7 with high position accuracy, integrity, continuity and availability.

8 249. For example, the HG2170 LASEREF Marine INS provides high-accuracy  
9 position, heading, pitch, roll, rates, and heave data.

10 250. The HG2170 LASEREF Marine INS provides long running navigation.

11 251. Direct infringement of claim 1 of the '290 Patent occurred when Honeywell  
12 made, imported, used, sold, and/or offered for sale the Accused AHRS Positioning  
13 Products that meet claim 1 of the '290 Patent.

14 252. Direct infringement of claim 1 of the '290 Patent continues to occur when  
15 Honeywell makes, imports, uses, sells, and/or offers for sale the Accused AHRS  
16 Positioning Products that meet claim 1 of the '290 Patent.

17 253. Honeywell has had knowledge of the '290 Patent since at least November  
18 21, 2006.

19 254. Honeywell made, imported, used, sold, and/or offered for sale the Accused  
20 AHRS Positioning Products knowing that these products infringe claim 1 of the '290  
21 Patent.

22 255. Honeywell makes, imports, uses, sells, and/or offers for sale the Accused  
23 AHRS Positioning Products knowing that these products infringe claim 1 of the '290  
24 Patent.

25 **WILLFUL INFRINGEMENT**

26 256. Honeywell has infringed the above identified claims of each of the '891, '789,  
27 '758, and '290 Patents despite its knowledge of the Patents-in-Suit, knowledge of how its  
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1 accused products (or their use) infringe the Patents-in-Suit since at least September 10,  
2 2020 and the objectively high likelihood that its actions constitute patent infringement.

3 257. Honeywell continues to infringe the above identified claims of the '290 Patent  
4 despite its knowledge of the '290 Patent, knowledge of how its accused products (or their  
5 use) infringe the '290 Patent since at least September 10, 2020 and the objectively high  
6 likelihood that its actions constitute patent infringement.

7 258. Honeywell's infringement of the Patents-in-Suit was and continues to be  
8 willful and deliberate, entitling AGNC to enhanced damages under 35 U.S.C. §284 and to  
9 attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. §285.

10 **JURY DEMAND**

11 AGNC demands a trial by jury on all issues that may be so tried.

12 **REQUEST FOR RELIEF**

13 WHEREFORE, Plaintiff AGNC requests that this Court enter judgment in its favor  
14 and against Defendant Honeywell International Inc. as follows:

- 15 A. Adjudging, finding, and declaring that Defendant has infringed the above-  
16 identified claims of each of the Patents-in-Suit under 35 U.S.C. § 271;
- 17 B. Awarding the past damages arising out of Defendant's infringement of the  
18 Patents-in-Suit to AGNC in an amount no less than a reasonable royalty,  
19 together with prejudgment and post-judgment interest, in an amount  
20 according to proof;
- 21 C. Adjudging, finding, and declaring that Defendant's infringement was willful  
22 and awarding enhanced damages and fees as a result of that willfulness  
23 under 35 U.S.C. § 284;
- 24 D. Adjudging, finding, and declaring that the Patents-in-Suit are valid and  
25 enforceable;
- 26 E. Awarding attorney's fees, costs, or other damages pursuant to 35 U.S.C. §§  
27 284 or 285 or as otherwise permitted by law; and  
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1 F. Granting AGNC such other further relief as is just and proper, or as the  
2 Court deems appropriate.  
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4 Dated: May 24, 2021

Respectfully submitted,

5 /s/ Gregory Markow

6 Gregory Markow (State Bar No. 216748)

gmarkow@cgs3.com

7 Crosbie Gliner Schiffman Southard &

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**CERTIFICATE OF SERVICE**

The undersigned certifies that all counsel of record who have consented to electronic service are being served with a copy of this document via the Court’s CM/ECF system on May 24, 2021

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*Attorney for Plaintiff American GNC Corporation*

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