PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT6167489

| SUBMISSION TYPE: | NEW ASSIGNMENT |
|-----------------------|----------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|------------------------------------|----------------|
| EAGLE TECHNOLOGIES, INC. | 04/21/2020 |
| L3HARRIS TECHNOLOGIES, INC. | 04/21/2020 |
| HARRIS GLOBAL COMMUNICATIONS, INC. | 04/21/2020 |

RECEIVING PARTY DATA

| Name: | ACACIA RESEARCH GROUP LLC |
|--|---------------------------|
| Street Address: 6136 FRISCO SQ. BLVD., SUITE 400 | |
| City: | FRISCO |
| State/Country: | TEXAS |
| Postal Code: | 75034 |

PROPERTY NUMBERS Total: 116

| Property Type | Number |
|----------------|---------|
| Patent Number: | 6442596 |
| Patent Number: | 6535227 |
| Patent Number: | 6606357 |
| Patent Number: | RE39983 |
| Patent Number: | 6628620 |
| Patent Number: | 6718394 |
| Patent Number: | 6754192 |
| Patent Number: | 6763013 |
| Patent Number: | 6763014 |
| Patent Number: | 6798761 |
| Patent Number: | 6804208 |
| Patent Number: | 6833811 |
| Patent Number: | 6870846 |
| Patent Number: | 6894985 |
| Patent Number: | 6901064 |
| Patent Number: | 6904032 |
| Patent Number: | 6954435 |
| Patent Number: | 6954449 |
| | |

PATENT REEL: 053019 FRAME: 0876

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| Property Type | Number |
|----------------|---------|
| Patent Number: | 6958986 |
| Patent Number: | 6961310 |
| Patent Number: | 6975614 |
| Patent Number: | 6982987 |
| Patent Number: | 6986161 |
| Patent Number: | 6996088 |
| Patent Number: | 7007102 |
| Patent Number: | 7027409 |
| Patent Number: | 7027426 |
| Patent Number: | 7068600 |
| Patent Number: | 7068605 |
| Patent Number: | 7079552 |
| Patent Number: | 7082117 |
| Patent Number: | 7085290 |
| Patent Number: | 7142866 |
| Patent Number: | 7216282 |
| Patent Number: | 7224678 |
| Patent Number: | 7281057 |
| Patent Number: | 7299038 |
| Patent Number: | 7304972 |
| Patent Number: | 7327690 |
| Patent Number: | 7333458 |
| Patent Number: | 7382765 |
| Patent Number: | 7394826 |
| Patent Number: | 7440572 |
| Patent Number: | 7453864 |
| Patent Number: | 7468954 |
| Patent Number: | 7561024 |
| Patent Number: | 7581095 |
| Patent Number: | 7606256 |
| Patent Number: | 7616961 |
| Patent Number: | 9461846 |
| Patent Number: | 7656288 |
| Patent Number: | 7729336 |
| Patent Number: | 7742399 |
| Patent Number: | 7764617 |
| Patent Number: | 7768992 |
| Patent Number: | 7773575 |

| Dataset Massala ass | |
|---------------------|---------|
| Patent Number: | 7894416 |
| Patent Number: | 7903601 |
| Patent Number: | 7933286 |
| Patent Number: | 7974402 |
| Patent Number: | 8009648 |
| Patent Number: | 8054819 |
| Patent Number: | 8059578 |
| Patent Number: | 8134950 |
| Patent Number: | 8154598 |
| Patent Number: | 8155093 |
| Patent Number: | 8213409 |
| Patent Number: | 8325702 |
| Patent Number: | 8331240 |
| Patent Number: | 8488589 |
| Patent Number: | 8537789 |
| Patent Number: | 8547875 |
| Patent Number: | 8571004 |
| Patent Number: | 8578015 |
| Patent Number: | 8654627 |
| Patent Number: | 8717940 |
| Patent Number: | 8885630 |
| Patent Number: | 8942197 |
| Patent Number: | 9066320 |
| Patent Number: | 9247482 |
| Patent Number: | 8165065 |
| Patent Number: | 7502360 |
| Patent Number: | 7103371 |
| Patent Number: | 7184421 |
| Patent Number: | 7184744 |
| Patent Number: | 7242671 |
| Patent Number: | 7787450 |
| Patent Number: | 7916666 |
| Patent Number: | 7983230 |
| Patent Number: | 8089884 |
| Patent Number: | 7710944 |
| Patent Number: | 7729321 |
| Patent Number: | 6826152 |
| Patent Number: | 7761904 |

| Property Type | Number |
|----------------|---------|
| Patent Number: | 8160657 |
| Patent Number: | 6453168 |
| Patent Number: | 6349210 |
| Patent Number: | 6980537 |
| Patent Number: | 6385174 |
| Patent Number: | 6349091 |
| Patent Number: | 6801782 |
| Patent Number: | 5943322 |
| Patent Number: | 6240294 |
| Patent Number: | 6539231 |
| Patent Number: | 6600927 |
| Patent Number: | 6700388 |
| Patent Number: | 7218682 |
| Patent Number: | 6859463 |
| Patent Number: | 7050775 |
| Patent Number: | 6404756 |
| Patent Number: | 6665333 |
| Patent Number: | 9185070 |
| Patent Number: | 7154937 |
| Patent Number: | 7650136 |
| Patent Number: | 7855997 |
| Patent Number: | 7869487 |

CORRESPONDENCE DATA

Fax Number: (415)426-4744

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent

using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

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Email: rlin@bdiplaw.com

Correspondent Name: RICHARD LIN

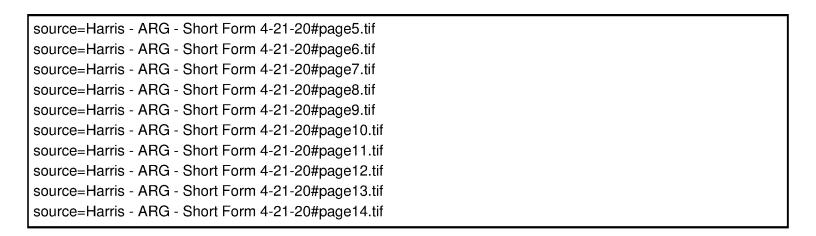
Address Line 1: 701 EL CAMINO REAL

Address Line 4: REDWOOD CITY, CALIFORNIA 94063

| NAME OF SUBMITTER: | RICHARD LIN |
|--------------------|---------------|
| SIGNATURE: | /Richard Lin/ |
| DATE SIGNED: | 06/23/2020 |

Total Attachments: 14

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ASSIGNMENT

EAGLE TECHNOLOGIES, INC, L3HARRIS TECHNOLOGIES, INC., HARRIS GLOBAL COMMUNICATIONS, INC. (collectively and hereafter, together with any successors, legal representatives or assigns thereof, "Assignor" or "Assignors") is the sole and exclusive owner and assignee of the Patents listed in the Exhibit attached hereto;

AND WHEREAS, **ACACIA RESEARCH GROUP LLC**, a Texas limited liability company having a place of business at 6136 Frisco Sq. Blvd., Suite 400, Frisco, TX 75034 (hereafter, together with any successors, legal representatives or assigns thereof, called "ASSIGNEE") wants to acquire the Assignor's entire right, title and interest in and to said **U.S. Patents listed in the Exhibit attached hereto**, and all the inventions therein, and Assignor is willing to enter into such assignment.

NOW, THEREFORE, effective on April 21, 2020 and in consideration of good and valuable consideration the receipt of which from ASSIGNEE is hereby acknowledged, Assignor has sold, assigned, transferred and set over, and does hereby sell, assign, transfer and set over to ASSIGNEE Assignor's entire right, title and interest in and to the **U.S. Patents listed in the Exhibit attached hereto,** and all patents, patent applications, foreign patents, foreign patent applications, continuations, continuations—in-part, divisionals, extensions, renewals, reissues and re-examinations related to all claims in the patents thereof, including without limitation, all rights to claim priority on the basis thereof, all rights to sue for past, present and future infringement, including the right to collect and receive any damages, royalties, or settlements for such infringements, all rights to sue for injunctive or other equitable relief, and any and all causes of action relating to any of the inventions or discoveries thereof;

Assignor hereby covenants that it has full right to convey Assignor's entire interest herein assigned, and that it has not executed, and will not execute, any agreement in conflict with this Assignment;

Assignor hereby further covenants and agrees that it will sign all lawful papers, execute and deliver all papers and take any actions that may be reasonably necessary or desirable to perfect the title to any aforementioned patents and inventions, execute all divisional, continuation, reexamination, reissue and substitute applications, and make all rightful oaths and generally take reasonable steps to aid ASSIGNEE to obtain proper patent protection for said inventions in all countries.

FOR USPTO RECORDING

| IN TESTIMONY WHERE | OF, I hereunto set my hand this day of | _, 20 |
|--------------------|---|-------|
| | HARRIS GLOBAL COMMUNICATIONS, INC. (Assignor) | |
| | By: | _ |
| | Name <u>Todd Taylor</u> | |
| | Title <u>Director</u> | |
| | Date: April 21, 2020 | |
| | L3HARRIS TECHNOLOGIES, INC. | |
| | By: Mitch Evander | |
| | Print Name: Mitch Evander | |
| | Title: Chief IP Counsel | |
| | Date: April 21, 2020 | |
| | EAGLE TECHNOLOGIES, LLC | |
| | Ву: | |
| | Print Name: <u>Todd Taylor</u> | |
| | Title: Manager | |
| | Date:_April 21,2020 | |

EXHIBIT

| Status | Title | Appl. No. | File Date | Patent No. | Issue Date | Exp. Date | Foreigns |
|---------|--|-----------|---------------------|---------------|---------------------|---------------------|----------|
| Expired | SHARED DATA VIEWS FOR LARGE-SCALE MULTIMODE ENVIRONMENTS | 09/376621 | 18- Aug- 1999 | 6442596 | 27- Aug- 2002 | 18- Aug- 2019 | None |
| Granted | SYSTEM AND METHOD FOR ASSESSING THE SECURITY POSTURE OF A NETWORK AND HAVING A GRAPHICAL USER INTERFACE | 09/500101 | 08-Feb- 2000 | 6535227 | 18- Mar- 2003 | 08- Feb- 2020 | DE, FR |
| Expired | CARRIER INJECTING WAVEFORM BASED MODULATION SCHEME FOR REDUCING SATELLITE TRANSPONDER POWER REQUIREMENTS AND EARTH TERMINAL ANTENNA SIZE | 09/393639 | 10-Sep- 1999 | 6606357 | 12- Aug- 2003 | 10- Sep- 2019 | None |
| Expired | CARRIER INJECTING WAVEFORM BASED MODULATION SCHEME FOR REDUCING SATELLITE TRANSPONDER POWER REQUIREMENTS AND EARTH TERMINAL ANTENNA SIZE | 11/203648 | 12- Aug- 2005 | RE399983 | 01- Jan- 2008 | 10- Sep- 2019 | None |
| Granted | HIERARCHIAL MODILE AD HOC NETWORK AND METHODS FOR ROUTE ERROR RECOVERY THEREIN | 10/134723 | 29-Apr- 2002 | 6628620 | 30- Sep- 2003 | 29- Apr- 2022 | DE, FR |
| Granted | HIERARCHICAL MOBILE AD-HOC NETWORK AND METHODS FOR PERFORMING REACTIVE ROUTING THEREIN USING AD-HOC ON-DEMAND DISTANCE VECTOR ROUTING (AODV) | 10/134901 | 29-Apr- 2002 | 6718394 | 06- Apr- 2004 | 29- Apr- 2022 | DE, FR |
| Granted | TEMPORAL TRANSITION NETWORK PROTOCOL (TTNP) IN A MOBILE AD HOC NETWORK | 10/134856 | 29-Apr- 2002 | 6754192 | 22- Jun- 2004 | 29- Apr- 2022 | DE, FR |
| Granted | INTELLIGENT COMMUNICATION NODE OBJECT BEACON FRAMEWORK INCLUDING NEIGHBOR DISCOVERY IN | 10/235111 | 04-Sep- 2002 | 6763013 | 13- Jul- 2004 | 04- Sep- 2022 | |

| | A MOBILE AD HOC NETWORK | | | | | | |
|---------|---|-----------|---------------------|---------|---------------------|---------------------|------------|
| Granted | INTELLIGENT COMMUNICATION NODE OBJECT BEACON FRAMEWORK (ICBF) WITH TEMPORAL TRANSITION NETWORK PROTOCOL (TTNP) IN A MOBILE AD HOC NETWORK | 10/253227 | 24-Sep- 2002 | 6763014 | 13- Jul- 2004 | 24- Sep- 2022 | DE, FR |
| Granted | METHOD AND DEVICE FOR ESTABLISHING COMMUNICATION LINKS AND HANDLING SP SLOT CONNECTION COLLISIONS IN A COMMUNICATION SYSTEM | 10/280947 | 25-Oct- 2002 | 6798761 | 28- Sep- 2004 | 25- Oct- 2022 | DE, FR, GB |
| Granted | METHOD AND DEVICE FOR ESTABLISHING COMMUNICATION LINKS WITH PARALLEL SCHEDULING OPERATIONS IN A COMMUNICATION SYSTEM | 10/280585 | 25-Oct- 2002 | 6804208 | 12- Oct- 2004 | 25- Oct- 2022 | DE, FR |
| Granted | SYSTEM AND METHOD FOR HIGHLY ACCURATE REAL TIME TRACKING AND LOCATION IN THREE DIMENSIONS | 10/265757 | 03-Oct- 2002 | 6833811 | 21- Dec- 2004 | 03- Oct- 2022 | |
| Granted | HIERARCHICAL MOBILE AD-HOC NETWORK AND METHODS FOR PERFORMING REACTIVE ROUTING THEREIN USING DYNAMIC SOURCE ROUTING (DSR) | 10/134859 | 29-Apr- 2002 | 6870846 | 22- Mar- 2005 | 29- Apr- 2022 | DE, FR |
| Granted | MONITORING LINK QUALITY IN A MOBILE AD HOC NETWORK | 10/212348 | 05- Aug- 2002 | 6894985 | 17- May- 2005 | 05- Aug- 2022 | DE, FR |
| Granted | METHOD AND DEVICE FOR ESTABLISHING COMMUNICATION LINKS AND DETECTING INTERFERENCE BETWEEN MOBILE NODES IN A COMMUNICATION SYSTEM | 10/280948 | 25-Oct- 2002 | 6901064 | 31- May- 2005 | 25- Oct- 2022 | DE, FR |
| Granted | METHOD AND DEVICE FOR ESTABLISHING COMMUNICATION LINKS BETWEEN MOBILE COMMUNICATION SYSTEMS | 10/043457 | 10-Jan- 2002 | 6904032 | 07- Jun- 2005 | 10- Jan- 2022 | |

| Granted | DETERMINING QUALITY OF SERVICE (QOS) ROUTING FOR MOBILE AD HOC NETWORKS | 10/134715 | 29-Apr- 2002 | 6954435 | 11- Oct- 2005 | 29- Apr- 2022 | DE, FR |
|---------|---|-----------|---------------------|---------|---------------------|---------------------|---------------------------|
| Granted | METHOD AND DEVICE FOR ESTABLISHING COMMUNICATION LINKS AND PROVIDING RELIABLE CONFIRM MESSAGES IN A COMMUNICATION SYSTEM | 10/280485 | 25-Oct- 2002 | 6954449 | 11- Oct- 2005 | 25- Oct- 2022 | DE, FR |
| Granted | WIRELESS COMMUNICATION SYSTEM WITH ENHANCED TIME SLOT ALLOCATION AND INTERFERENCE AVOIDANCE/MITIGATION FEATURES AND RELATED METHODS | 10/401004 | 27- Mar- 2003 | 6958986 | 25- Oct- 2005 | 27- Mar- 2023 | DE, FR |
| Granted | MULTIPLE PATH REACTIVE ROUTING IN A MOBILE AD HOC NETWORK | 10/214997 | 08- Aug- 2002 | 6961310 | 01- Nov- 2005 | 08- Aug- 2022 | DE, FR |
| Granted | INTELLIGENT COMMUNICATION NODE OBJECT BEACON FRAMEWORK IN A MOBILE AD HOC NETWORK | 10/235242 | 04-Sep- 2002 | 6975614 | 13- Dec- 2005 | 04- Sep- 2022 | DE, FR |
| Granted | WIRELESS COMMUNICATION NETWORK INCLUDING DATA PRIORITIZATION AND PACKET RECEPTION ERROR DETERMINATION FEATURES AND RELATED METHODS | 10/400601 | 27- Mar- 2003 | 6982987 | 03- Jan- 2006 | 27- Mar- 2023 | |
| Granted | MOBILE AD-HOC NETWORK WITH INTRUSION DETECTION FEATURES AND RELATED METHODS | 10/217017 | 12- Aug- 2002 | 6986161 | 10- Jan- 2006 | 12- Aug- 2022 | DE, FR, GB |
| Expired | DISTRIBUTED TRUNKING MECHANISM FOR VHF NETWORKING | 09/398019 | 17-Sep- 1999 | 6996088 | 07- Feb- 2006 | 17- Sep- 2019 | EP, IL, DE, FR, GB, IT |
| Granted | ADMISSION CONTROL IN A MOBILE AD HOC NETWORK | 10/134173 | 29-Apr- 2002 | 7007102 | 28- Feb- 2006 | 29- Apr- 2022 | DE, FR |

| Granted | METHOD AND DEVICE FOR ESTABLISHING COMMUNICATION LINKS AND FOR ESTIMATING OVERALL QUALITY OF A DIRECTIONAL LINK AND REPORTING TO OLSR IN A COMMUNICATION SYSTEM MULTI-CHANNEL MOBILE | 10/400997 | 27- Mar- 2003 | 7027409 | 11- Apr- 2006 | 27- Mar- 2023 | DE, FR |
|---------|--|-----------|---------------------|---------|---------------------|---------------------|-----------------------|
| Granteu | AD HOC NETWORK | 10/212394 | Aug- 2002 | 7027420 | Apr- 2006 | Aug- 2022 | DE, FR |
| Granted | TRAFFIC POLICING IN A MOBILE AD HOC NETWORK | 10/134714 | 29-Apr- 2002 | 7068600 | 27- Jun- 2006 | 29- Apr- 2022 | DE, FR |
| Granted | MOBILE AD HOC NETWORK (MANET) PROVIDING INTERFERENCE REDUCTION FEATURES AND RELATED METHODS | 10/658357 | 09-Sep- 2003 | 7068605 | 27- Jun- 2006 | 09- Sep- 2023 | DE, FR |
| Granted | MOBILE AD HOC NETWORK (MANET) WITH QUALITY- OF-SERVICE (QOS) PROTOCOL HIERARCHY AND RELATED METHODS | 10/658022 | 09-Sep- 2003 | 7079552 | 18- Jul- 2006 | 09- Sep- 2023 | DE |
| Granted | MOBILE AD-HOC NETWORK WITH INTRUSION DETECTION FEATURES AND RELATED METHODS | 10/217097 | 12- Aug- 2002 | 7082117 | 25- Jul- 2006 | 12- Aug- 2022 | DE, FR, GB, JP, KR |
| Granted | MOBILE AD HOC NETWORK (MANET) PROVIDING CONNECTIVITY ENHANCEMENT FEATURES AND RELATED METHODS | 10/658360 | 09-Sep- 2003 | 7085290 | 01- Aug- 2006 | 09- Sep- 2023 | DE, FR |
| Granted | LOAD LEVELING IN MOBILE AD-HOC NETWORKS TO SUPPORT END-TO-END DELAY REDUCTION, QOS AND ENERGY LEVELING | 10/657959 | 09-Sep- 2003 | 7142866 | 28- Nov- 2006 | 09- Sep- 2023 | DE, FR |
| Granted | MOBILE AD-HOC NETWORK (MANET) INCLUDING FORWARD ERROR CORRECTION (FEC), INTERLEAVING, AND MULTI-ROUTE COMMUNICATION FEATURES AND RELATED METHODS | 10/369313 | 19-Feb- 2003 | 7216282 | 08- May- 2007 | 19- Feb- 2023 | |

| Granted | WIRELESS LOCAL OR METROPOLITAN AREA NETWORK WITH INTRUSION DETECTION FEATURES AND RELATED METHODS | 10/217042 | 12- Aug- 2002 | 7224678 | 29- May- 2007 | 12- Aug- 2022 | DE, FI, FR, GB, IT, KR |
|---------|--|-----------|---------------------|---------|---------------------|---------------------|---------------------------|
| Granted | HIERARCHICAL MOBILE AD-HOC NETWORK AND METHODS FOR PERFORMING REACTIVE ROUTING THEREIN | 10/134559 | 29-Apr- 2002 | 7281057 | 09- Oct- 2007 | 29- Apr- 2022 | DE, FR |
| Granted | PREDICTIVE ROUTING INCLUDING THE USE OF FUZZY LOGIC IN A MOBILE AD HOC NETWORK | 10/426580 | 30-Apr- 2003 | 7299038 | 20- Nov- 2007 | 30- Apr- 2023 | DE, FR |
| Granted | METHOD AND DEVICE FOR ESTABLISHING COMMUNICATION LINKS AND HANDLING UNBALANCED TRAFFIC LOADS IN A COMMUNICATION SYSTEM | 10/280949 | 25-Oct- 2002 | 7304972 | 04- Dec- 2007 | 10- Jan- 2022 | DE, FR |
| Granted | WIRELESS LOCAL OR METROPOLITAN AREA NETWORK WITH INTRUSION DETECTION FEATURES AND RELATED METHODS | 10/217243 | 12- Aug- 2002 | 7327690 | 05- Feb- 2008 | 12- Aug- 2022 | DE, FR, GB, KR |
| Granted | WIRELESS COMMUNICATION NETWORK INCLUDING DIRECTIONAL AND OMNI- DIRECTIONAL COMMUNICATION LINKS AND RELATED METHODS | 10/400998 | 27- Mar- 2003 | 7333458 | 19- Feb- 2008 | 27- Mar- 2023 | DE, FR |
| Granted | PREDICTIVE ROUTING IN A MOBILE AD HOC NETWORK | 10/426281 | 30-Apr- 2003 | | 03- Jun- 2008 | 30- Apr- 2023 | DE, FR |
| Granted | MOBILE AD HOC NETWORK (MANET) PROVIDING QUALITY-OF-SERVICE (QOS) BASED UNICAST AND MULTICAST FEATURES | 10/658021 | 09-Sep- 2003 | 7394826 | 01- Jul- 2008 | 09- Sep- 2023 | DE, FR |
| Granted | SECURE WIRELESS LAN DEVICE AND ASSOCIATED METHODS | 09/760619 | 16-Jan- 2001 | 7440572 | 21- Oct- 2008 | 16- Jan- 2021 | None |

| Granted | PREDICTIVE ROUTE | 10/426731 | 30-Apr- | 7453864 | 18- | 30- | DE, FR |
|---------|---|-----------|-----------------|-----------|-------------|--------------|-------------|
| | MAINTENANCE IN A | | 2003 | | Nov- | Apr- | , |
| | MOBILE AD HOC NETWORK | | | | 2008 | 2023 | |
| Granted | MOBILE AD-HOC NETWORK | 11/011524 | 14-Dec- | 7468954 | 23- | 14- | |
| Grantea | PROVIDING EXPEDITED | 11/011321 | 2004 | 7 100551 | Dec- | Dec- | |
| | CONGLOMERATED | | | | 2008 | 2024 | |
| | BROADCAST MESSAGE | | | | | | |
| | REPLY FEATURES AND | | | | | | |
| G . 1 | RELATED METHODS | 11/606000 | 05.4 | 7561024 | 1.4 | 0.5 | |
| Granted | AD-HOC NETWORK ROUTING PROTOCOL | 11/696989 | 05-Apr- 2007 | 7561024 | 14- Jul- | 05- | |
| | INCLUDING THE USE OF | | 2007 | | 2009 | Apr- 2027 | |
| | FORWARD AND REVERSE | | | | 2007 | 2027 | |
| | MULTI-POINT RELAY (MPR) | | | | | | |
| | SPANNING TREE ROUTES | | | | | | |
| Granted | MOBILE AD-HOC NETWORK | 10/197148 | 17-Jul- | 7581095 | 25- | 17- | |
| | INCLUDING NODE | | 2002 | | Aug- | Jul- | |
| | AUTHENTICATION FEATURES AND RELATED | | | | 2009 | 2022 | |
| | METHODS | | | | | | |
| Expired | DISTRIBUTED TRUCKING | 11/110683 | 21-Apr- | 7606256 | 20- | 17- | |
| 1 | MECHANISM FOR VHF | | 2005 | | Oct- | Sep- | |
| | NETWORKING | | | | 2009 | 2019 | |
| Granted | ALLOCATING CHANNELS IN | 10/134862 | 29-Apr- | 7616961 | 10- | 29- | DE, FR |
| | A MOBILE AD HOC | 10,10.002 | 2002 | , 010, 01 | Nov- | Apr- | 22,111 |
| | NETWORK | | | | 2009 | 2022 | |
| Granted | MULTI-LAYERED | 11/593719 | Nov. 7, | 9461846 | Oct. | | |
| | CONFIGURABLE DATA | | 2006 | | 4, | | |
| | FUSION SYSTEMS AND | | | | 2016 | | |
| | METHODS FOR POWER AND BANDWIDTH EFFICIENT | | | | | | |
| | SENSOR NETWORKS | | | | | | |
| Granted | SYSTEMS AND METHODS | 11/593916 | 07- | 7656288 | 02- | 07- | |
| | FOR AUTOMATIC | | Nov- | | Feb- | Nov- | |
| | PROACTIVE PATTERN | | 2006 | | 2010 | 2026 | |
| | RECOGNITION AT A | | | | | | |
| | CONTROL CENTER DATABASE | | | | | | |
| Granted | SYNCHRONIZATION AND | 11/692278 | 28- | 7729336 | 01- | 28- | DE, FR, GB, |
| | TIMING SOURCE PRIORITY | | Mar- | | Jun- | Mar- | IT |
| | IN AN AD-HOC NETWORK | | 2007 | | 2010 | 2027 | |
| Granted | MOBILE AD-HOC NETWORK | 11/425837 | 22-Jun- | 7742399 | 22- | 22- | DE, FR, GB, |
| | (MANET) AND METHOD FOR | | 2006 | | Jun- | Jun- | IL, IT |
| | IMPLEMENTING MULTIPLE | | | | 2010 | 2026 | |
| | PATHS FOR FAULT | | | | | | |
| Crontad | TOLERANCE MODILE AD HOC NETWORK | 10/17/701 | 10 5 | 7764617 | 27- | 10 | DE, FR |
| Granted | MOBILE AD-HOC NETWORK AND METHODS FOR | 10/174721 | 19-Jun- 2002 | //0401/ | Jul- | 19- Jun- | DE, FK |
| | PERFORMING FUNCTIONS | | 2002 | | 2010 | 2022 | |
| | THEREIN BASED UPON | | | | | -022 | |
| | WEIGHTED QUALITY OF | | | | | | |
| | SERVICE METRICS | | | | | | |

| Granted | TDMA CHANNEL ACCESS SCHEDULING WITH | 11/428862 | 06-Jul- 2006 | 7768992 | 03- Aug- | 06- Jul- | DE, FR, GB, IL, IT |
|---------|--|-----------|---------------------|---------|---------------------|---------------------|-----------------------|
| | NEIGHBOR INDIRECT ACKNOWLEDGEMENT ALGORITHM (NbIA) FOR AD-HOC NETWORKS | | | | 2010 | 2026 | |
| Granted | SYSTEM AND METHOD FOR COMMUNICATING USING A PLURALITY OF TDMA MESH NETWORKS HAVING EFFICIENT BANDWIDTH USE | 11/459384 | 24-Jul- 2006 | 7773575 | 10- Aug- 2010 | 24- Jul- 2026 | DE, FR, GB, IT |
| Granted | SYSTEM AND METHOD FOR COMMUNICATING IN A TIME DIVISION MULTIPLE ACCESS (TDMA) MESH NETWORK HAVING MINIMIZED END-TO-END LATENCY | 11/620756 | 08-Jan- 2007 | 7894416 | 22- Feb- 2011 | 08- Jan- 2027 | |
| Granted | ASYNCHRONOUS DYNAMIC NETWORK DISCOVERY FOR LOW POWER SYSTEMS | 11/937015 | 08- Nov- 2007 | 7903601 | 08- Mar- 2011 | 08- Nov- 2027 | IL |
| Expired | DISTRIBUTED TRUCKING MECHANISM FOR VHF NETWORKING | 11/110684 | 21-Apr- 2005 | 7933286 | 26- Apr- 2011 | 17- Sep- 2019 | |
| Granted | TDMA MOBILE AD-HOC NETWORK (MANET) WITH SECOND ORDER TIMING AND TRACKING | 11/692361 | 28- Mar- 2007 | 7974402 | 05- Jul- 2011 | 28- Mar- 2027 | DE, FR, GB |
| Granted | MOBILE AD-HOC NETWORK WITH ISOSYNCHRONOUS COMMUNICATIONS AND RELATED METHODS | 12/117096 | 08- May- 2008 | 8009648 | 30- Aug- 2011 | 08- May- 2028 | |
| Granted | SYSTEM AND METHOD FOR SETTING A DATA RATE IN TDMA COMMUNICATIONS | 11/951498 | 06-Dec- 2007 | 8054819 | 08- Nov- 2011 | 06- Dec- 2027 | DE, FR, GB, IL |
| Granted | SYSTEM AND METHOD FOR SYNCHRONIZING TDMA MESH NETWORKS | 11/459389 | 24-Jul- 2006 | 8059578 | 15- Nov- 2011 | 24- Jul- 2026 | DE, FR, GB, IL, IT |
| Granted | CLUSTER HEAD ELECTION IN AN AD-HOC NETWORK | 11/695835 | 03-Apr- 2007 | 8134950 | 13- Mar- 2012 | 03- Apr- 2027 | |
| Granted | MULTIPURPOSE UNATTENDED GROUND SENSOR NODE WITH RELAY CAPABILITY | 11/598910 | 14- Nov- 2006 | 8154598 | 10- Apr- 2012 | 14- Nov- 2026 | |
| Granted | MOBILE AD-HOC NETWORK PROVIDING DESIRED LINK DELAY OFFSET WITHOUT GUARD TIMES AND RELATED METHODS | 12/125128 | 22- May- 2008 | 8155093 | 10- Apr- 2012 | 01- Aug- 2027 | DE, FR |

| Granted | SYSTEM AND METHOD FOR COMMUNICATING OVER MESH NETWORKS USING WAVEFORM-ENHANCED LINK-STATE ROUTING | 11/676736 | 20-Feb- 2007 | 8213409 | 03- Jul- 2012 | 20- Feb- 2027 | |
|---------|--|-----------|---------------------|---------|---------------------|---------------------|-------------------|
| Granted | MULTI-TIER AD-HOC NETWORK IN WHICH AT LEAST TWO TYPES OF NON- INTERFERING WAVEFORMS ARE COMMUNICATED DURING A TIMESLOT | 12/201021 | 29- Aug- 2008 | 8325702 | 04- Dec- 2012 | 29- Aug- 2028 | DE, FR |
| Granted | PROMISCUOUS MONITORING USING INTERNET PROTOCOL ENABLED DEVICES | 11/937002 | 08- Nov- 2007 | 8331240 | 11- Dec- 2012 | 08- Nov- 2027 | IL |
| Granted | SYSTEM AND METHOD FOR COMMUNICATING OVER MESH NETWORKS USING WAVEFORM-ENHANCED LINK-STATE ROUTING | 13/483194 | 30- May- 2012 | 8488589 | 16- Jul- 2013 | 20- Feb- 2027 | |
| Granted | MOBILE AD-HOC NETWORK PROVIDING COMMUNICATION LATENCY REDUCTION FEATURES AND RELATED METHODS | 12/125149 | 22- May- 2008 | 8537789 | 17- Sep- 2013 | 01- Aug- 2027 | DE, FR |
| Granted | NETWORK LAYER TOPOLOGY MANAGEMENT FOR MOBILE AD-HOC NETWORKS AND ASSOCIATED METHODS | 12/748757 | 29- Mar- 2010 | 8547875 | 01- Oct- 2013 | 29- Mar- 2030 | DE, EP, FR, GB |
| Granted | SYSTEM AND METHOD FOR SETTING A DATA RATE IN TDMA COMMUNICATIONS | 13/247227 | 28-Sep- 2011 | 8571004 | 29- Oct- 2013 | 06- Dec- 2027 | DE, FR, GB, IL |
| Granted | TRACKING TRAFFIC IN A MOBILE AD HOC NETWORK | 10/134948 | 29-Apr- 2002 | 8578015 | 05- Nov- 2013 | 29- Apr- 2022 | DE, FR |
| Granted | DATA-PATH DYNAMIC LINK MAINTENANCE IN MOBILE AD HOC NETWORKS | 11/619450 | 03-Jan- 2007 | 8654627 | 18- Feb- 2014 | 03- Jan- 2027 | |
| Granted | PREDICTIVE MOBILE AD HOC NETWORKING INCLUDING ASSOCIATED SYSTEM AND METHODS | 13/594095 | 24- Aug- 2012 | 8717940 | 06- May- 2014 | 15- Nov- 2024 | DE, FR |

| Granted | TDMA COMMUNICATIONS SYSTEM WITH CONFIGURATION BEACON AND ASSOCIATED METHOD | 11/762916 | 14-Jun- 2007 | 8885630 | 11- Nov- 2014 | 14- Jun- 2027 | |
|---------|--|-----------|---------------------|---------|---------------------|---------------------|---------------------------|
| Granted | MOBILE AD HOC NETWORK WITH DYNAMIC TDMA SLOT ASSIGNMENTS AND RELATED METHODS | 13/279651 | 24-Oct- 2011 | 8942197 | 27- Jan- 2015 | 24- Oct- 2031 | |
| Granted | METHOD TO BOOTSTRAP INTO A FREQUENCY AGILE AD HOC NETWORK OF RADIOS THAT USE A NON- DETERMINISTIC FREQUENCY PATTERN | 13/367418 | 07-Feb- 2012 | 9066320 | 23- Jun- 2015 | 07- Feb- 2032 | DE, FR, GB, IL |
| Granted | AD HOC WIRELESS COMMUNICATIONS NETWORK WITH NODE ROLE INFORMATION ROUTING AND ASSOCIATED METHODS | 13/197350 | 03- Aug- 2011 | 9247482 | 26- Jan- 2016 | 28- Sep- 2032 | DE, FR, GB, IT |
| Granted | AD-HOC NETWORK ACQUISITION USING CHAOTIC SEQUENCE SPREAD WAVEFORM | 12/248131 | 09-Oct- 2008 | 8165065 | 24- Apr- 2012 | 09- Oct- 2028 | DE, FR |
| Granted | METHOD AND APPARATUS FOR DYNAMIC NEIGHBOR DISCOVERY WITHIN WIRELESS NETWORKS USING TIME DIVISION MULTIPLE ACESS (TDMA) | 11/071235 | 04- Mar- 2005 | 7502360 | 10- Mar- 2009 | 10- Jul- 2026 | GB |
| Granted | METHOD AND APPARATUS FOR DYNAMIC VOICE RESERVATION WITHIN WIRELESS NETWORKS | 10/689661 | 22-Oct- 2003 | 7103371 | 05- Sep- 2006 | 11- Aug- 2024 | |
| Granted | METHOD AND APPARATUS FOR ON DEMAND MULTICAST AND UNICAST USING CONTROLLED FLOOD MULTICAST COMMUNICATIONS | 10/024146 | 21-Dec- 2001 | 7184421 | 27- Feb- 2007 | 12- Oct- 2024 | EP, GB |
| Granted | A GPS ENABLED EMERGENCY MESSAGING SYSTEM | 10/268096 | 10-Oct- 2002 | 7184744 | 27- Feb- 2007 | 27- Jan- 2024 | |
| Granted | SYSTEM AND METHOD FOR LINK-STATE BASED PROXY FLOODING OF MESSAGES IN A NETWORK | 10/316593 | 11-Dec- 2002 | 7242671 | 10- Jul- 2007 | 01- Mar- 2025 | AU, GB |
| Granted | METHOD AND SYSTEM FOR EFFICIENT NETWORK FORMATION AND MAINTENANCE OF NODE ROUTING DATABASES IN A MOBILE AD-HOC NETWORK | 11/545587 | 11-Oct- 2006 | 7787450 | 31- Aug- 2010 | 25- Nov- 2028 | AU, EP, FR, GB, IT, SE |

| Granted | RELIABLE BROADCAST PROTOCOL AND APPARATUS FOR SENSOR NETWORKS | 11/695879 | 03-Apr- 2007 | 7916666 | 29- Mar- 2011 | 02- May- 2029 | |
|---------|---|-----------|---------------------|-----------|---------------------|---------------------|----------------------------------|
| Granted | ADAPTIVE POWER AND DATA RATE CONTROL FOR AD-HOC MOBILE WIRELESS SYSTEMS | 11/775988 | 11-Jul- 2007 | 7983230 | 19- Jul- 2011 | 17- Jan- 2030 | |
| Granted | METHOD AND APPARATUS FOR EARLY WARNING OF CONGESTION IN AD-HOC WIRELESS NETWORKS | 12/098602 | 07-Apr- 2008 | 8089884 | 03- Jan- 2012 | 19- Aug- 2030 | EP |
| Granted | METHOD AND APPARATUS FOR TIME-OF-DAY SYNCHRONIZATION BETWEEN NETWORK NODES | 11/521413 | 15-Sep- 2006 | 7710944 | 04- May- 2010 | 13- Sep- 2027 | AU, DE, EP, FR, GB, IT, SE |
| Granted | NEARLY COLLISION-FREE CHANNEL ACCESS SYSTEM AND METHOD | 11/677313 | 21-Feb- 2007 | 7729321 | 01- Jun- 2010 | 25- Jul- 2028 | AU, EP, GB |
| Granted | A SYSTEM AND METHOD OF CONSERVING BANDWIDTH IN THE TRANSMISSION OF MESSAGE PACKETS | 09/661405 | 13-Sep- 2000 | 6826152 | 30- Nov- 2004 | 13- Sep- 2020 | EP, DE, FR, GB, IL |
| Granted | REMOVABLE CRYPTOGRAPHIC IGNITION KEY SYSTEM AND METHOD | 10/259866 | 30-Sep- 2002 | 7761904 | 20- Jul- 2010 | 30- Sep- 2022 | EP, DE, FR, GB |
| Granted | MOBILE WIRELESS COMMUNICATIONS DEVICE WITH ELASTOMERIC SEALING MEMBRANE COVERING SWITCH AND RELATED METHODS | 12/508732 | 24-Jul- 2009 | 8160657 | 17- Apr- 2012 | 24- Jul- 2029 | EP, IL, DE, FR, GB, IT |
| Expired | METHOD AND APPARATUS FOR DETERMINING THE POSITION OF A MOBILE COMMUNICATION DEVICE USING LOW ACCURACY CLOCKS | 09/365702 | 02- Aug- 1999 | 6453168 # | 17- Sep- 2002 | 02- Aug- 2019 | |
| Granted | BROADCAST METHOD IN CHANNEL RESERVATION SYSTEMS AND APPARATUS | 09/704711 | 03- Nov- 2000 | 6349210# | 19- Feb- 2002 | 03- Nov- 2020 | |
| Granted | METHOD AND APPARATUS FOR COMMUNICATION NETWORK CLUSTER FORMATION AND TRANSMISSION OF NODE LINK STATUS MESSAGES WITH REDUCED PROTOCOL OVERHEAD TRAFFIC | 09/709502 | 13- Nov- 2000 | 6980537 | 27- Dec- 2005 | 16- Jun- 2023 | |

| Expired | FLOODING OF ROSPF LINK- STATE ADVERTISEMENTS THROUGH CLU STERING BEACONS FOR DRASTIC REDUCTION OF ROSPF OVERHEAD | 09/705822 | 06- Nov- 2000 | 6385174# | 07- May- 2002 | 06- Nov- 2020 | |
|---------|--|-----------|---------------------|----------|---------------------|---------------------|-------------------|
| Granted | METHOD AND APPARATUS FOR CONTROLLING COMMUNICATION LINKS BETWEEN NETWORK NODES TO REDUCE COMMUNICATION PROTOCOL OVERHEAD TRAFFIC | 09/706845 | 07- Nov- 2000 | 6349091# | 19- Feb- 2002 | 07- Nov- 2020 | |
| Expired | METHOD AND APPARATUS OF DETERMINING THE POSITION OF A MOBILE COMMUNICATION DEVICE | 09/777625 | 06-Feb- 2001 | 6801782 | 05- Oct- 2004 | | |
| Expired | A COMMUNICATION METHOD FOR A CODE DIVISION MULTIPLE ACCESS SYSTEM WITHOUT A BASE STATION | 08/644658 | 24-Apr- 1996 | 5943322 | 24- Aug- 1999 | 24- Apr- 2016 | |
| Expired | MOBILE RADIO DEVICE HAVING ADAPTIVE POSITION TRANSMITTING CAPABILITIES | 08/866166 | 30- May- 1997 | 6240294 | 29- May- 2001 | | |
| Expired | MOBILE RADIO DEVICE HAVING ADAPTIVE POSITION TRANSMITTING CAPABILITIES | 09/521848 | 09- Mar- 2000 | 6539231 | 25- Mar- 2003 | 30- May- 2017 | |
| Expired | MOBILE RADIO DEVICE HAVING ADAPTIVE POSITION TRANSMITTING CAPABILITIES | 10/175283 | 20-Jun- 2002 | 6600927 | 29- Jul- 2003 | | |
| Expired | METHOD AND APPARATUS FOR DETECTING ELECTROMAGNETIC INTERFERENCE | 10/076568 | 19-Feb- 2002 | 6700388 | 02- Mar- 2004 | | |
| Granted | METHODS AND APPARATUS FOR SYNCHRONOUSLY COMBINING SIGNALS FROM PLURAL TRANSMITTERS | 10/073037 | 12-Feb- 2002 | 7218682# | 15- May- 2007 | 26- Feb- 2024 | EP, FR, GB |
| Expired | METHODS AND APPARATUS FOR ORGANIZING SELECTION OF OPERATION AL PARAMETERS IN A COMMUNICATION SYSTEM | 09/708189 | 08- Nov- 2000 | 6859463 | 22- Feb- 2005 | | |
| Granted | METHOD AND APPARATUS FOR SECURELY ENABLING A RADIO COMMUNIC ATION UNIT FROM STANDBY MODE | 10/192559 | 11-Jul- 2002 | 7050775# | 23- May- 2006 | 19- Oct- 2023 | EP, ES, GB, IT |

| Granted | METHOD AND APPARATUS FOR COORDINATING CHANNEL ACCESS TO SHARED PARALLEL DATA | 09/705588 | 03- Nov- 2000 | 6404756# | 11- Jun- 2002 | 03- Nov- 2020 | ЕР |
|---------|--|-----------|---------------------|----------|---------------------|---------------------|-------------------|
| Expired | CHANNELS METHOD AND APPARATUS FOR DETERMINING THE POSITION OF A MOBILE COMMUNICATION DEVICE USING LOW ACCURACY CLOCKS | 10/133368 | 29-Apr- 2002 | 6665333 | 16- Dec- 2003 | | |
| Granted | MANET WITH DNS DATABASE RESOURCE MANAGEMENT AND RELATED METHODS | 13/473984 | 17- May- 2012 | 9185070 | 10- Nov- 2015 | 17- May- 2032 | None |
| Granted | QUADRATURE MULTI- FREQUENCY RANGING (QMFR) APPLIED TO GPS MULTIPATH MITIGATION | 10/190606 | 09-Jul- 2002 | 7154937 | 26- Dec- 2006 | 11- Jul- 2024 | EP, IT, GB, FR |
| Granted | A GPS ENABLED EMERGENCY MESSAGING SYSTEM | 11/670827 | 02-Feb- 2007 | 7650136 | 19- Jan- 2010 | 08- Jan- 2024 | None |
| Granted | LONG RANGE SCHEDULING FOR DIRECTIONAL ANTENNA MANET NETWORKS | 11/832202 | 01- Aug- 2007 | 7855997 | 21- Dec- 2010 | 01- Aug- 2027 | EP, DE, FR |
| Granted | QUADRATURE MULTI- FREQUENCY RANGING (QMFR) APPLIED TO GPS MULTIPATH MITIGATION | 11/501066 | 09- Aug- 2006 | 7869487 | 11- Jan- 2011 | 21- Aug- 2024 | EP, IT, GB, FR |

RECORDED: 06/23/2020