

PATENT ASSIGNMENT

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| SUBMISSION TYPE: | NEW ASSIGNMENT | | | | | | | | | | |
|---|---|---------------|----------------|---------------------|------------|--------------------------|------------|-----------------|------------|-------------|------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT | | | | | | | | | | |
| CONVEYING PARTY DATA | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>Theodoros SALONIDIS</td> <td>02/21/2012</td> </tr> <tr> <td>Anand Prabhu SUBRAMANIAN</td> <td>03/20/2012</td> </tr> <tr> <td>Henrik LUNDGREN</td> <td>02/22/2012</td> </tr> <tr> <td>Don TOWSLEY</td> <td>02/27/2012</td> </tr> </tbody> </table> | | Name | Execution Date | Theodoros SALONIDIS | 02/21/2012 | Anand Prabhu SUBRAMANIAN | 03/20/2012 | Henrik LUNDGREN | 02/22/2012 | Don TOWSLEY | 02/27/2012 |
| Name | Execution Date | | | | | | | | | | |
| Theodoros SALONIDIS | 02/21/2012 | | | | | | | | | | |
| Anand Prabhu SUBRAMANIAN | 03/20/2012 | | | | | | | | | | |
| Henrik LUNDGREN | 02/22/2012 | | | | | | | | | | |
| Don TOWSLEY | 02/27/2012 | | | | | | | | | | |
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| State/Country: | FRANCE | | | | | | | | | | |
| Postal Code: | F-92130 | | | | | | | | | | |
| PROPERTY NUMBERS Total: 1 | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>Property Type</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>Application Number:</td> <td>13500475</td> </tr> </tbody> </table> | | Property Type | Number | Application Number: | 13500475 | | | | | | |
| Property Type | Number | | | | | | | | | | |
| Application Number: | 13500475 | | | | | | | | | | |
| CORRESPONDENCE DATA | | | | | | | | | | | |
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| ATTORNEY DOCKET NUMBER: | PF090104 US PCT | | | | | | | | | | |
| NAME OF SUBMITTER: | Patricia A. Verlangieri | | | | | | | | | | |
| Signature: | /Patricia A. Verlangieri, Reg No 42201/ | | | | | | | | | | |

Date:

09/23/2013

Total Attachments: 9

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Customer No. 24498

Docket No. PF090104

ASSIGNMENT AND AGREEMENT IN AN APPLICATION FOR LETTERS PATENT OF THE UNITED STATES OF AMERICA

I hereby declare that I am the sole inventor (if only one inventor is named below) or one of 4 joint inventors (if plural inventors are named below) of the inventions relating to METHOD FOR TOPOLOGY CONTROL USING SECTORIZED ANTENNAS IN WIRELESS NETWORKS

described in an Application for Patent filed on October 8, 2010 under Serial No. PCT/EP10/055038 and described in the file associated with Docket No. PF090104 listed above or, if not identified here by filing date and serial number or by the Docket Number listed above, executed by me on even date with my execution of this Assignment/Agreement.

For valuable consideration received, I hereby sell, assign and transfer to Thomson Licensing, a corporation duly organized and existing under the laws of the country of France, its successors, and assigns my entire right, title and interest, for all countries in and to said inventions, and all the rights and privileges under any and all Letters Patent that may be granted therefor, and any divisions, continuations, renewals and extensions thereof.

I agree that, when requested, I will, without charge to said corporation but at its expense, sign all papers, take all rightful oaths, make all rightful declarations and do all acts which may be necessary, desirable or convenient for securing and maintaining patents or other forms of protection for said inventions in any and all countries and for vesting title thereto in said corporation, its successors, assigns or nominees.

I agree that I will communicate to said corporation or its representatives any facts known to me respecting said inventions and when requested by said corporation and at its expense will testify in any legal proceedings, and generally do everything possible to aid said corporation, its successors, assigns and legal representatives or nominees, to obtain or enforce proper protection for said inventions in any and all countries.

I authorize and empower said corporation, its successors, assigns or nominees, to make application for patent or other form of protection for said inventions in its or their own name, or in my/our name, in any and all countries and to invoke and claim for any application for patent or other form of protection for said inventions filed by it or them, the benefit of the right of priority provided by the International Convention for the Protection of Industrial Property, as amended, or by any convention which may hereinafter be substituted for it, and to invoke and claim such right of priority without further written or oral authorization from me.

I hereby consent that a copy of this assignment shall be deemed a full legal and formal equivalent of any assignment, consent to file or like document which may be required in any country for any purpose and more particularly in proof of the right of the said corporation or its successors, assigns or nominees to apply for patent or other proper protection for said inventions, and to claim the aforesaid benefits of the right of priority provided by the International Convention for the Protection of Industrial Property, as amended, or by any convention which may hereinafter be substituted for it.

I covenant with Thomson Licensing, its successors, assigns, legal representatives, and nominees, that to the best of my knowledge the right, title and interest herein conveyed by me are free and clear of any encumbrance, and that I have full right to convey the same as herein expressed.

Form with signature lines for Inventor (1) Theodoros SALONIDIS, Inventor (2) Anand Prabhu SUBRAMANIAN, and Inventor (3) Henrik LUNDGREN, including witness lines and dates.

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Docket No. PF090104

| | | | |
|---------------------|---|-------|-----------------------------------|
| Signed at | _____ | Date | _____ |
| Inventor (4) | <u>Don TOWSLEY</u> (Type or Print) | _____ | (Signature in Full. No initials.) |
| Post Office Address | <u>33 Sunset ave - AMHERST - MA 01002 - USA</u> | | |
| 1st Witness | _____ | _____ | (Signature in Full. No initials.) |
| 2nd Witness | _____ | _____ | (Signature in Full. No initials.) |

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described in an Application for Patent filed on October 6, 2010 under Serial No. PCT/EP10/066088 and described in the file associated with Docket No. PF090104 listed above or, if not identified here by filing date and serial number or by the Docket Number listed above, executed by me on even date with my execution of this Assignment/Agreement.

For valuable consideration received, I hereby sell, assign and transfer to Thomson Licensing, a corporation duly organized and existing under the laws of the country of France, its successors, and assigns my entire right, title and interest, for all countries in and to said inventions, and all the rights and privileges under any and all Letters Patent that may be granted therefor, and any divisions, continuations, re-issues and extensions thereof.

I agree that, when requested, I will, without charge to said corporation but at its expense, sign all papers, take all rightful declarations and do all acts which may be necessary, desirable or convenient for securing and maintaining patents or other forms of protection for said inventions in any and all countries and for vesting title thereto in said corporation, its successors, assigns or nominees.

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Docket No. PF090104

| | | | |
|---------------------|---|-------|-----------------------------------|
| Signed at | _____ | Date | _____ |
| Inventor (s) | <u>Don TOWSLEY</u> (Type or Print) | _____ | (Signature in Full. No initials.) |
| Post Office Address | <u>33 Sunset ave - AMHERST - MA 01002 - USA</u> | | |
| 1st Witness | _____ | _____ | (Signature in Full. No initials.) |
| | (Type or Print) | | |
| 2nd Witness | _____ | _____ | (Signature in Full. No initials.) |
| | (Type or Print) | | |

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Form with signature blocks for Inventor (1) Theodoros SALONIDIS, Inventor (2) Anand Prabhu SUBRAMANIAN, and Inventor (3) Henrik LUNDGREN, including witness signatures and addresses.

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Docket No. PF090104

| | |
|--|-----------------------------------|
| Signed at _____ | Date _____ |
| Inventor (4) Don TOWSLEY (Type or Print) | (Signature in Full. No initials.) |
| Post Office Address 33 Sunset ave - AMHERST - MA 01002 - USA | |
| 1st Witness (Type or Print) | (Signature in Full. No initials.) |
| 2nd Witness (Type or Print) | (Signature in Full. No initials.) |

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Customer No. 24498

(Type or Print)

Docket No. PF090104

(Signature in Full, No Initials.)

2nd Witness

(Type or Print)

(Signature in Full, No Initials.)

| | | | |
|--------------|---|---|----------------|
| Signed at | <u>UNIVERSITY OF MASSACHUSETTS, AMHERST, MA</u> | Date | <u>2/27/12</u> |
| Inventor (4) | <u>Don TOWSLEY</u> (Type or Print) | <u>Don Towsley</u> (Signature in Full. No initials.) | |
| Address | Post Office <u>33 Sunset ave -- AMHERST -- MA 01002 - USA</u> | | |
| 1st Witness | <u>LARKIE GRANDS</u> (Type or Print) | <u>Larkie Grands</u> (Signature in Full. No initials.) | |
| 2nd Witness | <u>KAREN SACCO</u> (Type or Print) | <u>Karen Sacco</u> (Signature in Full. No initials.) | |

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