

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
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EPAS ID: PAT2877842

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

CONVEYING PARTY DATA

| Name | Execution Date |
|--------------------|----------------|
| CHRISTIAN MARKWART | 05/15/2014 |
| RUEDIGER HALFMANN | 05/15/2014 |

RECEIVING PARTY DATA

| | |
|------------------------|---------------------------------|
| Name: | NOKIA SOLUTIONS AND NETWORKS OY |
| Street Address: | KARAPORTTI 3 |
| City: | ESPOO |
| State/Country: | FINLAND |
| Postal Code: | 02610 |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|----------------------------|----------|
| Application Number: | 14361904 |

CORRESPONDENCE DATA

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| | |
|--------------------------------|-----------------------|
| ATTORNEY DOCKET NUMBER: | 089229.00846 |
| NAME OF SUBMITTER: | DOUGLAS H. GOLDHUSH |
| SIGNATURE: | /Douglas H. Goldhush/ |
| DATE SIGNED: | 05/30/2014 |

Total Attachments: 4

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ASSIGNMENT

For good and valuable consideration, I/we, the undersigned

Assignor 1)
Christian Markwart
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81667 Munich
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Assignor 2)
Ruediger Halfmann
residing at:
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hereby sell, assign, and transfer to

Nokia Solutions and Networks Oy

a Finnish corporation organized and existing under the laws of FINLAND , having its principal place of business in ESPOO , FINLAND herein the "Assignee", its successors, assigns and legal representatives the entire and exclusive right, title and interest in and for the United States, in all and to any improvements in the

(Title:) **Coordinated spectrum allocation and de-allocation to minimize spectrum fragmentation in a Cognitive Radio Network**

disclosed in the application for Letters Patent designating the United States, said application being identified in our records as

Applicants File No. 2011P01303WOUS
US-/PCT-Application No. PCT/EP2011/071678

BMK: 2589
FILE TO: 20110102

and in and to said application and all divisional, continuing substitute, renewal, reissue and all other applications for Letters Patent which have been or shall be filed in the United States on any of said improvements; and in and to all original and reissued patents which have been or shall be issued in the United States on said improvements; hereby agree that said Assignee may apply for and receive Letters Patent for said improvements in its own name and that when requested without charge to but at the expense of said Assignee, its successors, assigns, and legal representatives, to carry out in good faith the intent and purpose of this agreement, the undersigned will execute all divisional, continuing substitute, renewal, reissue and all other patent applications on any and all said improvements; execute all rightful oaths, assignments, powers of attorney and other papers; communicate to said Assignee, its successors, assigns and legal representatives all facts known to the undersigned relating to said improvements and the history thereof; and generally do everything possible which said Assignee, its successors, assigns, or legal representatives shall consider desirable for aiding in securing and maintaining proper patent protection for said improvements and for vesting title to said improvements and all applications for patents and all patents on said improvements in said Assignee, its successors, assigns, and legal representatives; and hereby covenant with said Assignee, its successors, assigns and legal representatives that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed had been made to others by the undersigned, and that full right to convey the same as herein expressed is possessed by the undersigned.

Assignor 1)

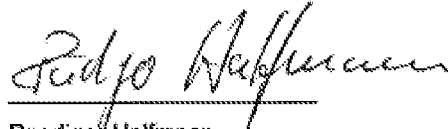
Date: 15.05.2014

Kishi Mubwet

Christian Markwart

Assignor 2)

Date: 15.05.14


Ruediger Halfmann