PATENT ASSIGNMENT COVER SHEET

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

CONVEYING PARTY DATA

| Name | Execution Date |
|---------------------|----------------|
| CURT WONG | 05/11/2017 |
| DEVAKI CHANDRAMOULI | 06/21/2017 |

RECEIVING PARTY DATA

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PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 16609435 |

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| NAME OF SUBMITTER: | SANDY FONG-HOU |
| SIGNATURE: | /Sandy Fong-Hou/ |
| DATE SIGNED: | 10/29/2019 |

Total Attachments: 3

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PATENT 505747487 REEL: 050856 FRAME: 0846

ASSIGNMENT

| I/we, (The ASSIGNOR(S)) | l/we. | (The | ASSI | SNOR | (S) |) |
|-------------------------|-------|------|------|------|-----|---|
|-------------------------|-------|------|------|------|-----|---|

Curt Wong Devaki Chandramouli

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, hereby assign to (hereafter referred to as The ASSIGNEE):

Nokia Technologies Oy Karaportti 3 02610 Espoo Finland

An invention entitled (invention Title):

SMS VIA NAS CARRIED BY NON-CELLULAR ACCESS

| The PATENT | RIGHTS referred to in this agreement a | re: | |
|-----------------|---|---------------------------------|----------------|
| _ | a national Patent Application No. | filed on | |
| _ | European Patent Application No. | filed on | |
| <u>x</u> | PCT application No. PCT/US2017/03 | 618 filed on May 08, 2017. | |
| for this invent | tion, executed by the ASSIGNOR(S) | | |
| _ | U.S. Patent Application Serial No | , filed | |
| _ _ | U.S. Patent No. | _, issued | |
| The PATENT | RIGHTS assigned under this agreeme | t are: | |
| Χ | U.S. Patent rights | | |
| <u>X</u> X | worldwide Patent rights. In this case, t | e assignee shall have the right | t to claim the |
| - | benefit of the filing date of any Patent | Ü | |
| X | the full and exclusive right to the inven | • • | |

The ASSIGNOR(S) do hereby assign the following to each ASSIGNEE; their successors and assigns:

an equal interest in and to the entire right, title and interest in and to the PATENT RIGHTS in the invention, all continuations, continuations-in-part, divisionals, re-issues, and re-examination patents and patent applications; and

the right to claim priority under 35 U.S.C. \S 119, based on any earlier foreign applications for this invention.

As to all U.S. Patent Applications assigned under this Agreement, the ASSIGNOR(S) hereby authorize(s) and request(s) the Commissioner of Patents and Trademarks to issue all Letters Patent to the ASSIGNEE(S) as the ASSIGNEE(S) of an equal interest in the entire right, title and interest, for the sole use and enjoyment of said ASSIGNEE(S), their successors and assigns.

Further, the ASSIGNOR(S) agree(s) to communicate to said ASSIGNEE(S), or their representatives, any facts known to the ASSIGNOR(S) respecting said invention, and testify in any legal proceedings, sign all lawful papers, execute all divisional, continuation, substitute, renewal, reexamination and reissue applications, execute all necessary assignment papers to cause any and all Letters Patent to be issued to said ASSIGNEE(S), make all rightful oaths and generally do everything necessary or desirable to aid said ASSIGNEE(S), their successors and assigns, to obtain and enforced proper protection for said invention.

Further, I/We authorize the attorney of record to update this document to include Patent Office information as deemed necessary (i.e., filing date, serial number, etc.);

Each Inventor: Please sign and date below:

PATENT REEL: 050856 FRAME: 0847 [Curt Wong]

Witness Signature
Printed Name Young

May 14 2017

NC102588

RECORDED: 10/29/2019

[Devaki Chandramoull]

Witness Signature
Printed Name Curt Wong

June 24, 2017

June 21, 2107

Date

PATENT REEL: 050856 FRAME: 0849