504353608 05/05/2017

PATENT ASSIGNMENT COVER SHEET

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NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
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PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15115366

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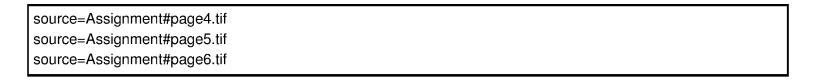
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DATE SIGNED:	05/05/2017

Total Attachments: 6

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PATENT 504353608 REEL: 042253 FRAME: 0827



PATENT REEL: 042253 FRAME: 0828

ASSIGNMENT

i/we, (The ASSIGNOR(S)):

Jari Olavi Lindholm Kari Juhani Hooli Timo Erkki Lunttila Esa Tapani Tiirola Tommi Koivisto

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

Nokia Solutions and Networks Oy Karaportti 3 02610 Espoo Finland

An invention entitled (invention Title):

METHOD, APPARATUS AND COMPUTER PROGRAM

The PATENT	FRIGHTS referred to in this agreement are:		
_	a national Patent Application No. filed on		
_	European Patent Application No. filed on		
<u>x</u>	PCT application No. PCT/EP2014/051913 filed on January 31, 2014		
for this inven	tion, executed by the ASSIGNOR(S)		
X	U.S. Patent Application Serial No. <u>15/115366</u> , filed <u>July 29, 2016</u> .		
<u>~</u>	U.S. Patent No, issued		
	FRIGHTS assigned under this agreement are:		
<u>X</u>	U.S. Patent rights		
<u>X</u> X	worldwide Patent rights. In this case, the assignee shall have the right to claim the		
_	benefit of the filing date of any Patent Application identified above.		
v			
X	the full and exclusive right to the invention;		

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. § 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: 042253 FRAME: 0829

[Jari Olavi Lindholm]

Witness Signature
Printed Name ESA MCKAMA'CI

8/8/2016

Date

818/2016 Date

22.8.2016

Witness Signature
Printed Name <u>Eeva Lähetlung</u>,

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[Timo Erkki Lunttila]

Witness Signature
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[Esa Tapani Tiirola]

22.8.20/6 Date

Witness Signature
Printed Name Exa Lahethangas

22 8 2016 Date

[Tommi Koivisto]

1.11.2016

Date

Witness Signature
Printed Name JOONAS HAARALA

1.11, 2016 Date

PATENT REEL: 042253 FRAME: 0834

RECORDED: 05/05/2017