

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
AARON T. TWOHIG	03/22/2019
FEARGHAL O'MAOLCATHA	03/22/2019
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PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	16362833
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DATE SIGNED:	03/25/2019
Total Attachments: 4	
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ASSIGNMENT

WHEREAS, we, Aaron T. Twobig and Fearghal O'Maolcatha have invented an invention comprising and/or embodying certain improvements or discoveries or both as described in an application for Letters Patent of the United States entitled Type-Based Message Bus with Message Type Hierarches for Non-Object Oriented Applications, the specification of which:

- is being executed on even date herewith and is about to be filed in the United States Patent Office;
- was filed on _____ as U.S. Application No. _____;
- was patented under U.S. Patent No. _____ on _____.

WHEREAS, EMC IP Holding Company LLC (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the State of Delaware and having a usual place of business at 176 South Street, Hopkinton, Massachusetts 01748 desires to acquire an interest therein in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey to ASSIGNEE all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of substitution,

reissue, divisional or continuation applications and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

AND, we do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives.

IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals as set forth below:

Date: 22 March 2019

Aaron Twohig
Inventor's Signature

Print full name of first inventor: Aaron T. Twohig
Residence: Rathpeacon, Ireland
Citizenship: Ireland
Mailing Address: 3 Lios Cara Lawn, Killeens
Rathpeacon, Ireland

I, AIDAN HALLY (name) whose residential address is BALLYHINDON, FERMOY CO CORK, IRELAND was personally present and did see AARON TWOHIG (name of person signing the assignment) who is personally known to me, execute the above assignment.

Aidan Hally (signature of first witness)

Signed at DELL EMC, OVENS (location of witness signature)

on this day MARCH 22nd of 2019 (date of signature)

I, Colm O'Leary (name) whose residential address is 4 The Circle, Grand Marina, Ovens Co. Wick was personally present and did see AARON TWOHIG (name of person signing the assignment) who is personally known to me, execute the above assignment.

Colm O'Leary (signature of second witness)

Signed at DELL EMC, OVENS (location of witness signature)

on this day March 22nd of 2019 (date of signature)

Date: 22/03/2019

Fearghal O'Maolcatha
Inventor's Signature

Print full name of second inventor:

Fearghal O'Maolcatha

Residence:

Midleton, Ireland

Citizenship:

Ireland

Mailing Address:

4 Lakeview, Holly Road, Rostellan, Cork
Midleton, Ireland

I ADAM HALLY (name) whose residential address is
BALLYHINDON, FERMOY CO. CORK, IRELAND
was personally present and did see _____ (name of person signing
the assignment) who is personally known to me, execute the above assignment.

Adam Hally (signature of first witness)

Signed at DELL EMC, OVENS (location of witness signature)

on this day 22nd MARCH of 2019. (date of signature)

I Colm D. Leary (name) whose residential address is
4 The Circle, George Mason, Ovens, Co. Cork
was personally present and did see FEARGHAL O'MAOLCATHA (name of person signing
the assignment) who is personally known to me, execute the above assignment.

Colm D. Leary (signature of second witness)

Signed at Dell EMC, Ovens (location of witness signature)

on this day 22nd March of 2019. (date of signature)