PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4947603

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
LOWELL THOMASON	05/01/2018
JOHN RUD	05/01/2018
KEN TRISKO	05/01/2018
NEAL DOBBERKE	05/02/2018
RONALD S. WESELY	05/01/2018
TERRY STAARMANN	05/02/2018
TIMOTHY H. BRANDT	05/01/2018
DANIEL JOHN CUTSHALL	05/01/2018

RECEIVING PARTY DATA

Name:	INTERNATIONAL BUSINESS MACHINES CORPORATION	
Street Address:	NEW ORCHARD ROAD	
City:	ARMONK	
State/Country:	NEW YORK	
Postal Code:	10504	

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15971585

CORRESPONDENCE DATA

Fax Number: (860)286-0115

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent

using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 860.286.2929

Email: usptopatentmail@cantorcolburn.com

Correspondent Name: CANTOR COLBURN LLP Address Line 1: 20 CHURCH STREET

Address Line 2: 22ND FLOOR

Address Line 4: HARTFORD, CONNECTICUT 06103

ATTORNEY DOCKET NUMBER:	P201702760US01
NAME OF SUBMITTER:	DAVID K. KINCAID
SIGNATURE:	/dkk/

504900859 PATENT REEL: 045721 FRAME: 0056

ATE SIGNED: 05/04/2018		
This document serves as an Oath/Declaration (37 CFR 1.63).		
Total Attachments: 6		
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PATENT REEL: 045721 FRAME: 0057

DECLARATION (37 C.F.R. § 1.63) FOR UTILITY PATENT APPLICATION USING AN APPLICATION DATA SHEET (37 C.F.R. § 1.76) AND ASSIGNMENT

Title of Invention: DETERMINING GAPS IN DATA

As a below named and undersigned inventor, I hereby declare that:
his declaration is directed to the attached application, or (if following box is checked):
] United States application or PCT international application numberiled on
he above-identified application was made or authorized to be made by me.
believe that I am the original inventor or an original joint inventor of a claimed invention in the pplication.
have reviewed and understand the contents of the application, including the claims.
am aware of the duty to disclose to the United States Patent and Trademark Office all information nown to me to be material to patentability as defined in 37 C.F.R. § 1.56.

Whereas, I ("ASSIGNOR") have made certain inventions, improvements, and discoveries (herein referred to as the "Invention") disclosed in the above-identified patent application and further identified by the IBM Docket Number provided above in the header of this document;

Whereas, International Business Machines Corporation (herein referred to as the "ASSIGNEE"), a corporation of New York having a place of business at Armonk, New York, desires to acquire, and I desire to grant to the ASSIGNEE, my entire worldwide right, title, and interest in and to the Invention and in and to any and all patent applications and patents directed thereto;

Now, therefore, for good and valuable consideration, the receipt and sufficiency thereof being hereby acknowledged, I hereby sell or have sold, assign or have assigned, and otherwise transfer or have transferred to the ASSIGNEE, its successors, legal representatives, and assigns, my entire worldwide right, title, and interest in and to the Invention, the above-identified United States patent application, and any and all other patent applications and patents for the Invention which may be applied for or granted therefor in the United States and in all foreign countries and jurisdictions, including all divisions, continuations, reissues, reexaminations, renewals, extensions, counterparts, substitutes, and extensions thereof, and all rights of priority resulting from the filing of such applications and granting of such patents. In addition, I hereby authorize and request the Director of the United States Patent and Trademark Office to issue any United States Patent, and foreign patent authorities to issue any foreign patent, granted for the Invention, to the ASSIGNEE, its successors, legal representatives, and assigns, my entire worldwide right, title, and interest in and to the same to be held and enjoyed by the ASSIGNEE, its successors, legal representatives, and assigns to the full end of the terms for which any and all such patents may be granted, as fully and entirely as would have been held and enjoyed by me had this Assignment not been made; and I agree to execute any and all documents and instruments and perform all

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IBM DOCKET NUMBER: P201702760US01

lawful acts reasonably related to recording this Assignment or perfecting title to the Invention and all related patents and applications, in the ASSIGNEE, its successors, legal representatives, and assigns, whenever requested by the ASSIGNEE, its successors, legal representatives, or assigns.

I acknowledge my prior and ongoing obligations to sell, assign, and transfer my rights under this Assignment to the ASSIGNEE and am unaware of any reason why I may not have the full and unencumbered right to sell, assign, and transfer my rights hereby sold, assigned, and transferred, and have not executed, and will not execute, any document or instrument in conflict herewith. I also hereby grant the ASSIGNEE, its successors, legal representatives, and assigns, the right to insert in this Assignment any further identification (including, but not limited to, patent Application Number) which may be necessary or desirable for recordation of this Assignment. This Assignment is governed by the substantive laws of the State of New York, and any disputes will be resolved in a New York state court or federal court sited in New York.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. § 1001 by fine or imprisonment of not more than five (5) years, or both.

Signature: January (1) Legal Name of Inventor: Lowell Thomason	Date:
Signature: John Rud (2) Legal Name of Inventor: John Rud	Date:
Signature: Men United (3) Legal Name of Inventor: Ken Trisko	
Signature: Lead Dobberke (4) Legal Name of Inventor: Neal Dobberke	Date: 5/2/2018

Signature: foryld S. Well	Date: 5/1/2018
(5) Legal Name of Inventor: Ronald S. Wesely	
Signature:	Date:
(6) Legal Name of Inventor: Terry Staarmann	
Signature (7) Legal Name of Inventor; Timothy H. Brandt	Date: <u>5/1/2018</u>
Signature (8) Legal Name of Inventor; Daniel John Cutshall	Date: 5/1/2018

APPLICATION DATA SHEET (37 C.F.R. § 1.76) AND ASSIGNMENT

Title of Invention: DETERMINING GAPS IN DATA

As a below named and undersigned inventor, I hereby declare that:

This declaration is directed to the attached application, or (if following box is checked):

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I have reviewed and understand the contents of the application, including the claims.

I am aware of the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in 37 C.F.R. § 1.56.

Whereas, I ("ASSIGNOR") have made certain inventions, improvements, and discoveries (herein referred to as the "Invention") disclosed in the above-identified patent application and further identified by the IBM Docket Number provided above in the header of this document;

Whereas, International Business Machines Corporation (herein referred to as the "ASSIGNEE"), a corporation of New York having a place of business at Armonk, New York, desires to acquire, and I desire to grant to the ASSIGNEE, my entire worldwide right, title, and interest in and to the Invention and in and to any and all patent applications and patents directed thereto;

Now, therefore, for good and valuable consideration, the receipt and sufficiency thereof being hereby acknowledged. I hereby sell or have sold, assign or have assigned, and otherwise transfer or have transferred to the ASSIGNEE, its successors, legal representatives, and assigns, my entire worldwide right, title, and interest in and to the Invention, the above-identified United States patent application, and any and all other patent applications and patents for the Invention which may be applied for or granted therefor in the United States and in all foreign countries and jurisdictions, including all divisions, continuations, reissues, reexaminations, renewals, extensions, counterparts, substitutes, and extensions thereof, and all rights of priority resulting from the filing of such applications and granting of such patents. In addition, I hereby authorize and request the Director of the United States Patent and Trademark Office to issue any United States Patent, and foreign patent authorities to issue any foreign patent, granted for the Invention, to the ASSIGNEE, its successors, legal representatives, and assigns, my entire worldwide right, title, and interest in and to the same to be held and enjoyed by the ASSIGNEE, its successors, legal representatives, and assigns to the full end of the terms for which any and all such patents may be granted, as fully and entirely as would have been held and enjoyed by me had this Assignment not been made; and I agree to execute any and all documents and instruments and perform all

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PATENT REEL: 045721 FRAME: 0061



related patents and applications, in the ASSIGNEE, its successors, legal representatives, and assigns, whenever requested by the ASSIGNEE, its successors, legal representatives, or assigns.

I acknowledge my prior and ongoing obligations to sell, assign, and transfer my rights under this Assignment to the ASSIGNEE and am unaware of any reason why I may not have the full and unencumbered right to sell, assign, and transfer my rights hereby sold, assigned, and transferred, and have not executed, and will not execute, any document or instrument in conflict herewith. I also hereby grant the ASSIGNEE, its successors, legal representatives, and assigns, the right to insert in this Assignment any further identification (including, but not limited to, patent Application Number) which may be necessary or desirable for recordation of this Assignment. This Assignment is governed by the substantive laws of the State of New York, and any disputes will be resolved in a New York state court or federal court sited in New York.

Thereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. § 1001 by fine or imprisonment of not more than five (5) years, or both.

Signature:	Date:
Signature:	Date:
Signature:	Date:
Signature:	Date:

(4) Legal Name of Inventor: Neal Dobberke

Page 2 of 3

	Signature:		Date:
	(5) Legal Name of Inventor: Ronald S. Wesely		
	Signature: Jack State (6) Legal Name of Inventor: Terry Staarmann	e e e e e e e e e e e e e e e e e e e	_Date: <u>5-2-78</u>
à là			
	Signature:	· · · · · · · · · · · · · · · · · · · 	Date:
	(7) Legal Name of Inventor: Timothy H. Brandt		
	Signature:	MANAGARA ANG MANAGARA	Date:
	(8) Legal Name of Inventor: Daniel John Cutshall		

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RECORDED: 05/04/2018