

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT4732619

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
MATTHEW J. WARD	12/12/2017
JOSHUA J. CRAWFORD	12/12/2017
GREGORY E. MCBRIDE	12/12/2017
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	INTERNATIONAL BUSINESS MACHINES CORPORATION
<b>Street Address:</b>	NEW ORCHARD ROAD
<b>City:</b>	ARMONK
<b>State/Country:</b>	NEW YORK
<b>Postal Code:</b>	10504
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	15840363
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(310)556-7984
<i>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.</i>	
<b>Phone:</b>	3105567983
<b>Email:</b>	pmdrop@ipmatters.com
<b>Correspondent Name:</b>	KONRAD RAYNES DAVDA & VICTOR LLP
<b>Address Line 1:</b>	350 S. BEVERLY DRIVE, SUITE 360
<b>Address Line 4:</b>	BEVERLY HILLS, CALIFORNIA 90212
<b>ATTORNEY DOCKET NUMBER:</b>	P201704730US01 18.772
<b>NAME OF SUBMITTER:</b>	PATRICIA MCLAUGHLIN
<b>SIGNATURE:</b>	/Patricia McLaughlin/
<b>DATE SIGNED:</b>	12/13/2017
This document serves as an Oath/Declaration (37 CFR 1.63).	
<b>Total Attachments: 2</b>	
source=P201704730US01 (18.772) Assign_121317#page1.tif	
source=P201704730US01 (18.772) Assign_121317#page2.tif	

**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 SPACE TO RELEASE IN A TARGET VOLUME TO  
WHICH TRACKS FROM A SOURCE VOLUME ARE MIRRORED**

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):

☒ United States application or PCT international application number 15/840,363 filed on  
2017-12-13.

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 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.

(1) Legal Name of Inventor: Matthew J. WARD

SIGNATURE: Matthew Ward DATE: 12-12-17

(2) Legal Name of Inventor: Joshua J. CRAWFORD

SIGNATURE: [Signature] DATE: 12-12-17

(3) Legal Name of Inventor: Gregory E. MCBRIDE

SIGNATURE: Gregory E. McBride DATE: 12 Dec 17