

06-07-2002



To the Honorable Commissioner of Patents a

102115348

the attached original documents or copy thereof.

jc971 U.S. PTO
10/159075

05/31/02

1. Name of conveying party(ies):

Joseph Cox Ballantyne
Jack Wilson Stokes III
Henrique S. Malvar

2. Name and address of receiving party(ies):

Name: Microsoft Corporation

Internal Address:

Additional name(s) of conveying
party(ies) attached? [] Yes [X] No

3. Nature of conveyance:

[X] Assignment [] Merger
[] Security Agreement [] Change of Name
[] Other

Execution Date: 5/31/2002

Street Address: One Microsoft Way

City: Redmond

State/Country: Washington ZIP: 98052

Additional name(s) & address(es) attached? [] Yes [X] No

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is: 5/31/2002

A. Patent Application No.(s)

B. Patent No.(s)

06/05/2002 MMEKONEH 00000023 10159075

03 FD 581

40.00 OP

Additional Numbers attached? [] Yes [X] No

5. Name and address of party to whom
correspondence concerning document
should be mailed:

Name: Himanshu S. Amin

Internal Address:

Amin & Turocy, LLP

Street Address: 24th Floor, National City Cetner
1900 E. 9th Street

City: Cleveland

State: Ohio ZIP: 44114

6. Total number of applications and patents involved: [1]

7. Total fee (37 CFR 3.41)\$ 40.00

[X] Enclosed

[] Authorized to be charged to deposit account

8. Deposit account number:

50-1063

(Attach duplicate copy of this page if paying by deposit account)

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9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy
of the original document.

Jeffrey R. Sadlowski

Name of Person Signing

Signature

May 31, 2002

Date

Reg. No. 47,914 Total number of pages including cover sheet attachments, and document: [4]

Mail documents to be recorded with required cover sheet information to:
Commissioner of Patents & Trademarks, Box Assignments
Washington, D.C. 20231

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial Number:
Filing Date:
Inventorship: Joseph Cox Ballantyne, *et al.*
Applicant: Microsoft Corporation
Attorney's Docket No.: MSFTP332US
MS Docket No.: MS188877.1
Title: ADAPTIVE ESTIMATION AND COMPENSATION OF
CLOCK DRIFT IN ACOUSTIC ECHO CANCELLERS

PATENT ASSIGNMENT

PARTIES TO THE ASSIGNMENT

Assignor(s):

Joseph Cox Ballantyne
17336 NE 34th Street
Redmond, Washington 98052

Jack Wilson Stokes III
703 Riverside Drive
North Bend, Washington 98045

Henrique S. Malvar
2302 233rd Avenue NE
Sammamish, Washington 98074

Assignee:

Microsoft Corporation
Corporation in the State of Washington
One Microsoft Way
Redmond, WA 98052

AGREEMENT

WHEREAS, ASSIGNOR(S) (listed above) are inventor(s) of an invention entitled "ADAPTIVE ESTIMATION AND COMPENSATION OF CLOCK DRIFT IN ACOUSTIC ECHO CANCELLERS" as described and claimed in the specification forming part of an application for United States letters patent referenced above; WHEREAS, Microsoft Corporation (hereinafter referred to as ASSIGNEE), a corporation of the State of Washington having a place of business at One Microsoft Way, Redmond, WA 98052, is desirous of acquiring the entire right, title

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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MS Docket No.:

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Joseph Cox Ballantyne, *et al.*

Microsoft Corporation

MSFTP332US

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ADAPTIVE ESTIMATION AND COMPENSATION OF
CLOCK DRIFT IN ACOUSTIC ECHO CANCELLERS

and interest in and to the invention and in and to any letters patent that may be granted therefore in the United States and in any and all foreign countries;

NOW, THEREFORE, in exchange for good and valuable consideration, the receipt of which is hereby acknowledged, ASSIGNOR(S) hereby sell, assign and transfer unto

ASSIGNEE, the entire right, title and interest in and to said invention, said application and any and all letters patent which may be granted for said invention in the United States of America and its territorial possessions and in any and all foreign countries, and in any and all divisions, reissues and continuations thereof, including the right to file foreign applications directly in the name of ASSIGNEE and to claim priority rights deriving from said United States application to which said foreign applications are entitled by virtue of international convention, treaty or otherwise, said invention, application and all letters patent on said invention to be held and enjoyed by ASSIGNEE and its successors and assigns for their use and benefit and of their successors and assigns as fully and entirely as the same would have been held and enjoyed by ASSIGNOR(S) had this assignment, transfer and sale not been made. ASSIGNOR(S) hereby authorize and request the Commissioner of Patents and Trademarks to issue all letters patent on said invention to ASSIGNEE. ASSIGNOR(S) agree to execute all instruments and documents required for the making and prosecution of applications for United States and foreign letters patent on said invention, for litigation regarding said letters patent, or for the purpose of protecting title to said invention or letters patent therefore.

May 31, 2002
Date

Joseph Cox Ballantyne
Joseph Cox Ballantyne

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial Number:

Filing Date:

Inventorship:

Applicant:

Attorney's Docket No.:

MS Docket No.:

Title:

Joseph Cox Ballantyne, *et al.*

Microsoft Corporation

MSFTP332US

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ADAPTIVE ESTIMATION AND COMPENSATION OF
CLOCK DRIFT IN ACOUSTIC ECHO CANCELLERS

May 31, 2002

Date

Jack Wilson Stokes III
Jack Wilson Stokes III

MAY 31, 2002

Date

HSA
Henrique S. Malvar