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(71) Applicant (for all designated States except US): **Microsoft Corporation** [US/US]; One Microsoft Way, Redmond, WA 98052-6399 (US).

(72) Inventors: **ABHISHEK, Abhishek**; One Microsoft Way, Redmond, WA 98052-6399 (US). **KRANTZ, Anton, W.**; One Microsoft Way, Redmond, WA 98052-6399 (US).

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**Declarations under Rule 4.17:**

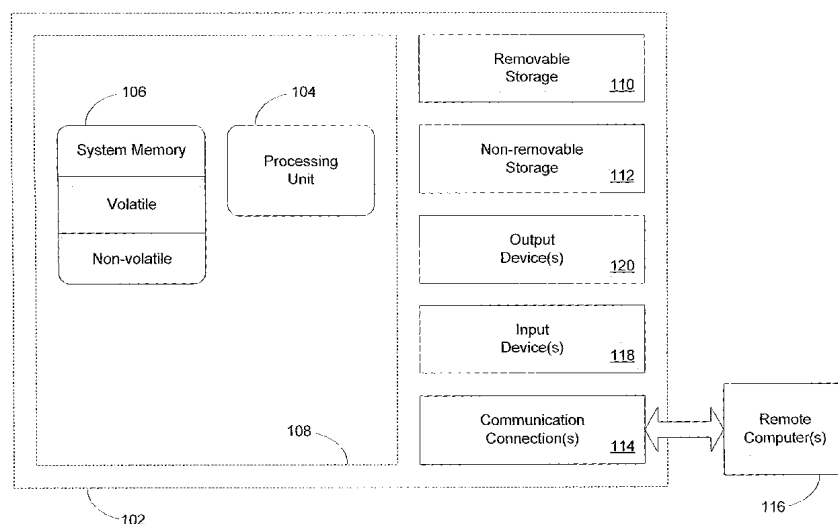
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

**Published:**

- with international search report

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23 April 2009

(54) Title: EFFICIENT FORMATION OF AD HOC NETWORKS



**FIG. 1**

(57) **Abstract:** An ad hoc network identifier may be received, for example, at an ad hoc network convergence module. One or more ad hoc network parameters may be generated as a function of the ad hoc network identifier. Each of a group of computers attempting to form an ad hoc network identified by the ad hoc network identifier may generate the one or more ad hoc network parameters. Two or more of the group of computers may perform an ad hoc network formation protocol parameterized with the generated one or more ad hoc network parameters. An instruction to join the network may be received, for example, at a networking service. If it is detected that the network is an ad hoc network, an ad hoc network address acquisition mode featuring accelerated ad hoc network address acquisition may be activated. Efficient formation of the ad hoc network may thus be facilitated.

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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US06/24452

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - H04B 7/00 (2007.10)

USPC - 370/310

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(8) - H04B 7/00 (2007.10)

USPC - 370/310, 370/338

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Patbase

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,842,460 B1 (OLKKONEN et al) 11 January 2005 (11.01.2005) entire document	1-8, 11-15
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Y		9,10
Y	US 2004/0103278 A1 (ABHISHEK et al) 27 May 2004 (27.05.2004) entire document	9,10
A	US 2003/0187973 A1 (WESLEY) 02 October 2003 (02.10.2003) entire document	1-15
A	US 2002/0073204 A1 (DUTTA et al) 13 June 2002 (13.06.2002) entire document	1-15

☐ Further documents are listed in the continuation of Box C.


\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search

27 November 2007

Date of mailing of the international search report

06 FEB 2008

Name and mailing address of the ISA/US

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Authorized officer:

Blaine R. Copenheaver

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**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2. ☐ Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

See Extra Sheet (page 10)

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:  
1-15

**Remark on Protest**

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

his application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claims 1-15, drawn to a computer-readable medium and a computerized system for efficient formation of an ad hoc network. Group II, claims 16-20, drawn to a computer-readable medium having computer-executable instructions for efficient formation of an ad hoc network.

The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the special technical feature of the Group I invention is performing an ad hoc network formation protocol parameterized with at least one ad hoc network parameter that is generated as a function of a received ad hoc network identifier as claimed therein is not present in the invention of Group II; and the special technical feature of the Group II invention is activating an ad hoc network address acquisition mode comprising accelerated acquisition of an ad hoc network address as claimed therein is not present in the invention of Group I.

Since none of the special technical features of the Group I and II inventions is found in more than one of the inventions, unity of invention is lacking.