(54) Title: SYSTEM AND METHOD FOR PROVIDING WLAN SECURITY THROUGH SYNCHRONIZED UPDATE AND ROTATION OF WEP KEYS

(57) Abstract: A system and method are disclosed that overcome deficiencies of prior art IEEE 802.11 WEP key management schemes. Preferred embodiments of the present system and method update WEP keys (14) and rotate transmission key indices in a synchronized manner and on a frequent basis making it impractical for a hacker to gather sufficient network traffic using any one WEP key to decrypt that key and without disrupting communications. Preferred embodiments of the present system and method do not require changes in access point (22) or mobile unit hardware, radio drivers, or firmware and are therefore compatible with existing or legacy network infrastructure or components. The disclosed system and method may be used to facilitate secure communications between one or more access points and one or more mobile units (26) and/or groups of two or more mobile units engaging in peer-to-peer associations.
before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(88) Date of publication of the international search report:
12 February 2004
# INTERNATIONAL SEARCH REPORT

**A. CLASSIFICATION OF SUBJECT MATTER**

- IPC(7) : H04L 9/00
- US CL. : 380/277

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)

- U.S. : 380/274,277,278,281,284,44,46,270

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

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

Please See Continuation Sheet

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y,P</td>
<td>US 6,453,159 B1 (LEWIS) 17 September 2002 (17.09.2002), column 5, lines 37-66; column 6, lines 7-65; column 12, lines 53-63.</td>
<td>1-19</td>
</tr>
<tr>
<td>Y</td>
<td>US 6,078,663 A (YAMAMOTO) 20 June 2000 (20.06.2000), column 13, lines 17-37; column 20, lines 34-57.</td>
<td>1-19</td>
</tr>
</tbody>
</table>

**Date of the actual completion of the international search**


**Date of mailing of the international search report**

02 DEC 2003

**Authorized officer**

Ayaz Sheikh

**Telephone No.**

703-305-3900

**Form PCT/ISA/210 (second sheet) (July 1998)**