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**WO 2009/073144 A3**

(54) Title: BIO-CRYPTOGRAPHY: SECURE CRYPTOGRAPHIC PROTOCOLS WITH BIPARTITE BIOTOKENS

(57) Abstract: Techniques, systems and methods are described relating to combining biometric and cryptographic techniques to support securely embedding data within a token and subsequent biometrically-enabled recovery of said data. Various transformation approaches are described that provide a secure means for transforming a stored or live, secure biometric-based identity token, embedding data into such tokens and biometric-based matching to both verify the user's identity and recover the embedded data. Security enhancements to a range of existing protocols are described using the techniques. Systems using novel protocols based on these techniques are described

| <b>INTERNATIONAL SEARCH REPORT</b>   |  | International application No.<br>PCT/US08/13190   |
|--|--|---|
| <b>A. CLASSIFICATION OF SUBJECT MATTER</b><br>IPC: <b>H04L 9/32( 2006.01)</b><br><br>USPC:       713/186<br>According to International Patent Classification (IPC) or to both national classification and IPC  |  |   |
| <b>B. FIELDS SEARCHED</b><br>Minimum documentation searched (classification system followed by classification symbols)<br>U.S. : 713/186<br><br>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched<br><br>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)<br>EAST  |  |   |
| <b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>  |  |   |
| Category *   | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No.   |
| X<br>---<br>Y  | US 7,178,025 B2 (SCHEIDT et al.) 13 February 1007 (13.02.2007), entire document.   | 1-14<br>-----<br>15-20  |
| Y  | US 2001/0039619 A1 (LAPERRE et al.) 08 November 2001 (08.11.2001), entire document.  | 15-20   |
| A  | US 7,590,861 B2 (ABDALLAH et al.) 15 September 2009 (15.09.2009).  | 1-20  |
| A  | US 2002/0176583 A1 (BUTTIKER) 28 November 2002 (28.11.2002).   | 1-20  |
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