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YINGJIU LI ET AL: "A security-enhanced one-time payment scheme for credit card" RESEARCH ISSUES ON DATA ENGINEERING: WEB SERVICES FOR E-COMMERCE AND E-GOVERNMENT APPLICATIONS, 2004. PROCEEDINGS. 14TH INTERNATIONAL WORKSHOP ON BOSTON, MA, USA 28-29 MARCH pages 40-47 ISBN: 0-7695-2095-2

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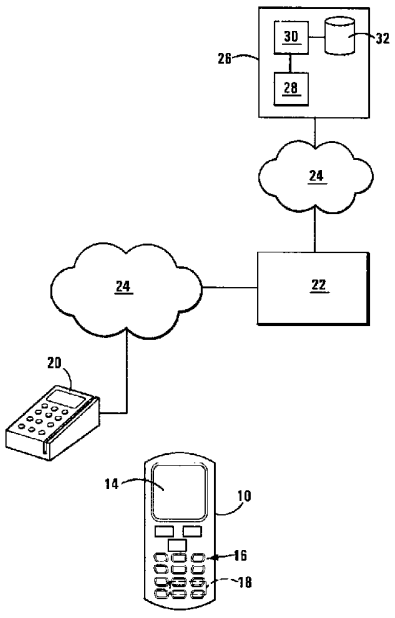
(54) Abstract Title: **Secure financial transactions**

(57) A primary account number ("PAN") of a conventional credit or debit account with a bank or other financial institution is emulated or simulated, which incorporates, in encrypted form, the actual account number. The simulated PAN may also incorporate an amount to be debited from that account. Thus, an account number and an amount are encrypted and mapped into a string of digits which appears to be a valid PAN. The actual account number and the transaction amount are thus embedded in the simulated PAN. The simulated PAN is then processed by existing financial transacting infrastructure, with the issuing bank knowing that it is not a PAN and that the appropriate digits are to be decrypted to provide the embedded account number and the embedded amount. In one application, a transactor wishing to effect a financial transaction, generates a simulated PAN and supplies it to a supplier of goods or services from whom he wishes to purchase said goods or services. The supplier enters the simulated PAN and the amount of the transaction in a conventional way. This data is then transmitted to an acquiring bank, which onwardly transmits it to the issuing bank for authorisation. The issuing bank then extracts the embedded account number and embedded amount, checks that the embedded amount and the supplied amount are the same (as well as other conventional checks), and if they are the same authorizes the transaction. Those skilled in the art will appreciate that, in most instances, a transactor is required to provide an expiry date and a card verification value ("CVV"). Either or both of these could also be simulated and used to encrypt information.



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