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February 3, 2004

The Honorable Mary Kiffmeyer
Minnesota Secretary of State
Electronic Real Estate Recording Task Force, Chair
180 State Office Building
St. Paul, MN 55155

Re: Report on the Legal Issues Concerning the Romney Patents
Our File: M934.11-0001

Dear Secretary Kiffmeyer:

We have reviewed and analyzed Romney et al, U.S. Patent No. 5,872,848 ("the '848 patent", which is attached hereto as Exhibit A) and Romney et al., U.S. Patent No. 6,085,322 ("the '322 patent", which is attached hereto as Exhibit B) with respect to the standards proposed by the State of Minnesota Electronic Real Estate Recording ("ERER") Task Force.

I. OPINION SUMMARY

It is our opinion that the '848 and '322 patents (collectively, "the Romney patents") are invalid under 35 U.S.C. § 103(a) as being obvious over the prior art. In addition, it is our opinion that the proposed ERER Standards **will not** necessitate public infringement of the Romney patents; that is, adherence to the Standards will not be the cause for an individual to infringe the Romney patents.

The Romney patents are directed toward a method and apparatus for "witnessed authentication of electronic documents." The '848 patent requires both an originating party and a witness to apply a digital signature. It is our understanding that the ERER Standards will not require infringement of the '848 patent because they require only one digital signature.

The '322 patent specifies that the originating and witnessing parties apply "electronic signature indicia" (as opposed to digital signatures) to the electronic document. The term "electronic signature indicia" is not defined by the '322 patent, and it is our opinion that it must be limited to digital signatures. To the extent that it is not so limited, however, it is our opinion that the '322 patent is invalid under 35 U.S.C. § 112 for failing to meet the written description requirement (in addition to being invalid for obviousness under 35 U.S.C. § 103).

II. STEPS TAKEN

In preparing this report, we undertook the following steps:

1. Met twice with the legal subcommittee of the ERER task force to gain insight into the proposed Electronic Real Estate Recording Standards and to present interim findings;
2. Studied the Romney patents and their corresponding prosecution histories;
3. Searched public and private databases for ownership, licensing, and litigation history information concerning the Romney patents;
4. Searched public and private databases for prior art patents and articles that taught the methods claimed by the Romney patents;
5. Contacted several individuals identified during the prior art search for information regarding the state of the art in 1997;
6. Construed the key terms of the Romney patent claims;
7. Identified the potential scope of the Romney patent claims as it relates to the proposed Electronic Real Estate Recording Standards;
8. Compared the Romney patent claims to the prior art;
9. Presented final findings to the ERER task force; and
10. Prepared this Final Report.

III. THE ROMNEY PATENTS

A. The '848 Patent.

The '848 patent was filed on February 18, 1997 as U.S. Patent Application Serial No. 08/800,560 ("the '560 application") with 38 claims, of which, claims 1, 10, 19, and 29 were independent. The first substantive action in the prosecution of the '560 application was a phone conference prompted by the Examiner. During the phone conference, Applicant agreed to withdraw claims 1-18, and the Examiner found claims 19-38 to be allowable. Subsequently, the Examiner mailed a Notice of Allowance in which he provided the following as his reason of allowance:

> The verifying statement indicating that the verifying party witnessed execution of the digital signature is neither taught nor motivated by the prior art of record. Note that "witnessing" as disclosed in the specification refers to physically observing the act taking place within the presence of the verifying party.

The '848 patent thereafter issued on February 16, 1999 having claims 1-20, of which, claims 1 and 11 are independent claims. Claim 1 recites:

> A method for authenticating an electronic document comprising the steps of:
> generating a first digital signature of an originating party for said electronic document;
> generating an identification envelope comprising a verifying statement for said electronic document, said verifying statement comprising a statement of a verifying party indicating that said verifying party witnessed execution of said first digital signature by said originating party;
> generating a second digital signature of said verifying party for said electronic document and for said identification envelope.

Claim 11 recites:

> A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a method for authenticating an electronic document, said method comprising the steps of:
> generating a first digital signature of an originating party for said electronic document;
> generating an identification envelope comprising a verifying statement for said electronic document, said verifying statement comprising a statement of a verifying party indicating that said verifying party witnessed execution of said first digital signature by said originating

party;
generating a second digital signature of said verifying party for said electronic document and for said identification envelope.

B. The '322 Patent.

The '322 patent was filed on October 12, 1998 as U.S. Patent Application Serial No. 09/170,337 ("the '337 application"). The '337 application was filed as a continuation of the '560 application (which resulted in the '848 patent), and contained 38 claims identical to those initially filed in the '560 application.

The first substantive action in the prosecution of the '337 application was a telephone interview between the Examiner and Applicant's attorney. The Examiner contacted Applicant to cancel claims 19-38 which corresponded to the allowed claims of the '848 patent. Shortly thereafter, the Examiner issued an Office Action in which he rejected pending claims 1-18 under 35 U.S.C. § 101 as claiming non-statutory subject matter and under the judicially-created doctrine of obviousness-type double patenting.

In response, Applicant submitted an Amendment in which claims 1-10 were amended in an attempt to overcome the objection under 35 U.S.C. § 101 and claims 19-46 (later numbered by the Examiner as 39-66) were added. A terminal disclaimer was also filed to overcome the rejection under the judicially-created doctrine of obviousness-type double patenting. As a result of the terminal disclaimer, the '322 patent will expire on the same date as the '848 patent, and common ownership must be maintained of the two Romney patents.

The Examiner issued another Office Action. In this Office Action, the Examiner allowed claims 48, 49, and 53-61. Regarding the remaining claims, the Examiner indicated that claims 50-52 contained allowable subject matter; rejected claims 1-18 and 39-47 under 35 U.S.C. 101 as claiming non-statutory subject matter; rejected claims 40-44 and 50-52 under 35 U.S.C. 112, ¶2, as being indefinite; and rejected claims 62-66 under both 35 USC 102(e) as being anticipated by Bisbee (U.S. Patent No. 5,615,268) and 35 U.S.C. 103(a) as being obvious over Schneier ("Applied Cryptology: Protocols, Algorithms, and Source Code in C", 2nd Edition, John Wiley and Sons, NY (Oct. 1995) pp. 185-187 "Public-Key Key Management"). The Examiner issued the following statement

regarding the allowed subject matter:

> Neither the verifying statement indicating that the verifying party witnessed execution (claim 48) of the digital signature nor the verifying statement "attesting for" the first digital signature is neither taught nor motivated by the prior art of record. Note that "witnessing" as disclosed in the specification refers to physically observing the act taking place within the presence of the verifying party, and "attesting for" is interpreted as witnessing when the term is given its broadest reasonable interpretation in light of the specification.

In response to this Office Action, and to hasten allowance of the application, Applicant submitted an Amendment in which each of the rejected claims (specifically, claims 1-18, 39-47, and 62-66) was canceled. After entry of Amendment, claims 48-61 remained pending.

The '337 application issued as the '322 patent on July 4, 2000 with claims 1-14, of which claim 1 below is the only independent claim:

> A method for establishing the authenticity of an electronic document comprising:
>
> obtaining an electronic document;
>
> obtaining a first electronic signature indicia from an originating party;
>
> applying said first electronic signature indicia to said electronic document;
>
> generating an identification envelope comprising a verifying statement, said verifying statement comprising a statement by a verifying party indicating that said verifying party witnessed the application of said first electronic signature indicia;
>
> obtaining a second electronic signature indicia from said verifying party;
>
> applying said second electronic signature indicia to said electronic document.

IV. CLAIM CONSTRUCTION

Analysis of patent claims, for both infringement and invalidity purposes, begins with a construction of the claims to establish their meaning and scope. Accordingly, the key terms of the Romney patents are discussed below.

A. Digital Signature.

According to the Free On-line Dictionary of Computing, a digital signature is the "[e]xtra data appended to a message which identifies and authenticates the sender and message data using

public-key encryption. The sender uses a one-way hash function to generate a hash-code of about 32 bits from the message data. He then encrypts the hash-code with his private key. The receiver recomputes the hash-code from the data and decrypts the received hash (sic) with the sender's public key. If the two hash-codes are equal, the receiver can be sure that data has not been corrupted and that it came from the given sender."[1] This definition is consistent with the Romney patents which provide that a digital signature serves to link an electronic document with an owner of the private key corresponding to a particular public key. ('848 patent at col. 2:52-61).

B. Electronic Signature Indicia.

This term is not defined by the Romney patents. In fact, the term was not used in the original '848 patent, but was added with the '322 patent. The only signatures taught or suggested by the Romney patents are handwritten signatures (in the context of the prior art) and digital signatures. Accordingly, electronic signature indicia must be a digital signature.

However, it may be argued that it would be obvious to those skilled in the relevant art (at the time the '848 patent was filed) that the digital signatures of the '848 patent include electronic signatures, for which standards allow for three types: (a) Signature Images are digitized images of an individual's signature; (b) Text Signatures consist of text captured by an application; and (c) Signature Objects are external data objects (for instance, a handwritten signature electronically captured by a biometric device).[2]

C. Identification Envelope.

The Romney patents define the "identification envelope" as the "information added by the authenticator [Notary] to the electronic document according to the present invention." ('848 patent at col. 9:50-52). The envelope includes a verifying statement, and may also include without limitation biometric data taken from the Witness, identification sources checked by the Notary, the public key of the Witness, and signals to indicate start/end of the various sections of the verifying

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[1] Http://dictionary.reference.com/search?q=digital%20signature.

[2] ERERTF Business Analysis Services Project: Electronic Recording Standards Summary at p. 13.

statement. ('848 patent at col. 9:52 - col. 10:67).

V. CLAIM COVERAGE: WHAT IS COVERED BY THE ROMNEY PATENTS?

Assuming for the sake of argument alone that the Romney patents are valid, the Romney patents would cover the following two scenarios:

(1) (a) Originator generates a **digital** signature for an electronic document in the physical presence of Notary; (b) an identification envelope including a verifying statement is created; (c) Notary generates a **digital** signature for the electronic document and the identification envelope. (Claims 1 and 11 of the '848 patent).

(2) (a) Originator applies an **electronic** signature to an electronic document in the physical presence of Notary; (b) an identification envelope comprising a verifying statement is created; (c) Notary applies an **electronic** signature to the electronic document. Here, the language is unclear as to what happens to the identification envelope. The language is also unclear as to whether the signature is electronic or digital. (Claim 1 of the '322 patent).

However, the Romney patents cannot cover a scenario where an originator generates an electronic or digital signature for an electronic document without notarization thereof. This is true even where the originator also submits a digital certificate attesting to their ownership of the digital signature, because the certificate authority that issued the digital certificate would not have physically witnessed the application of the signature to the electronic document.

VI. VALIDITY OF THE ROMNEY PATENTS

A. The '322 Patent Is Invalid As Having Added New Matter and For Failing to Meet the Written Description Requirement.

35 U.S.C. § 132(a) (with emphasis) provides:

> Whenever, on examination, any claim for a patent is rejected, or any objection or requirement made, the Director shall notify the applicant thereof, stating the reasons for such rejection, or objection or requirement, together with such information and references as may be useful in judging of the propriety of continuing the prosecution of his application; and if after receiving such notice, the applicant persists in his claim for a patent, with or without amendment, the application shall be reexamined. **No amendment shall introduce new matter into the disclosure of the invention.**

Thus, during prosecution of a patent application, Applicants are precluded from adding new matter to the patent application. Claims that include new matter are properly rejected as failing to fulfill the written description requirement. M.P.E.P. § 706.03(o).

To fulfill the written description requirement of 35 U.S.C. § 112, "a patent specification must clearly allow persons of ordinary skill in the art to recognize that the inventor invented what is claimed." *Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473, 1479 (Fed. Cir. 1998). While the specification need not provide *in haec verba* support for the claimed invention, "the disclosure must convey with reasonable clarity to those skilled in the art that the inventor was in possession of the invention...." *Crown Operations Int'l Ltd. v. Solutia, Inc.*, 289 F.3d 1367, 1380 (Fed. Cir. 2002).

The '322 patent does not provide any disclosure that would suggest to those skilled in the art that the inventors (as of the February 18, 1997 filing date of the '848 patent) intended their invention to cover electronic signatures as defined above. In fact, the '322 patent emphasizes its application to digital signatures and the security that results therefrom. Thus, to the extent that the electronic signature indicia of the '322 patent claims cover electronic signatures in addition to digital signatures, the '322 patent is invalid as failing to meet the written description requirement.

B. The Romney Patents Are Invalid Over the Prior Art.

35 U.S.C. § 102 provides, in part:

> A person shall be entitled to a patent unless —
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or ...
> (e) ... a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent ....

35 U.S.C. 103(a) provides:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Exhibits C and D attached hereto are claim charts that provide a detailed invalidity analysis of the '848 and '322 patents, respectively. The following is a short summary of that analysis.

1. Dziewit et al., U.S. Patent No. 5,031,214.

Dziewit et al., U.S. Patent No. 5,031,214 ("the Dziewit patent", which is attached hereto as Exhibit E) claims priority to January 29, 1990, and issued on July 9, 1991. Accordingly, the Dziewit patent qualifies as prior art under 35 U.S.C. § 102(b).

The Dziewit patent teaches both a multi-party and a single-party document authentication apparatus. As part of the document authentication process, a first party affixes a signature to an electronic document in the presence of a witness(es) and/or a notary. A co-located witness(es) and/or notary then electronically signs the electronic document to attest to the first party having electronically signed the electronic document. Once the document has been electronically executed, a digital signature is appended to the document to preserve document integrity. (Col. 12:44-67).

As detailed in Exhibits C and D attached hereto, it is our opinion that claims 1-7, 9-17, and 19-20 of the '848 patent and claims 1-8 and 10-14 of the '322 patent are invalid under 35 U.S.C. § 103(a) as being obvious over the Dziewit patent in view of the prior art admitted by the Romney patents. It is additionally our opinion that claims 8 and 18 of the '848 patent and claim 9 of the '322 patent are invalid under 35 U.S.C. § 103(a) as being obvious over the Dziewit patent in view of the prior art admitted by the Romney patents and U.S. Patent No. 5,005,200 summarized below.

2. Bisbee et al., U.S. Patent No. 5,748,738.

Bisbee et al., U.S. Patent No. 5,748,738 ("the Bisbee '738 patent", which is attached hereto as Exhibit F) was filed on September 15, 1995 and issued on May 5, 1998. The Bisbee '738 patent may qualify as prior art under either 35 U.S.C. § 102(a) or 102(e).

The Bisbee '738 patent is a continuation-in-part of U.S. Patent No. 5,615,268 ("the 'Bisbee '268 patent"), which was cited by the Examiner during prosecution of the '322 patent. However, Fig. 7 and its corresponding disclosure were not a part of the Bisbee '268 patent considered by the Examiner.

The Bisbee '738 patent is directed toward a "system and method for electronic transmission, storage and retrieval of authenticated documents." (Title). Figure 7 illustrates an example document certification process. An electronic document is presented to a Transfer Agent's terminal, which may optionally have a stylus pad for capture of hand-written signatures. The parties to the agreement execute their hand-written signatures on the document using the stylus pad. These signatures are captured and inserted in appropriate locations in the electronic document. After all parties have signed the document, the Transfer Agent certifies the completion of the document's execution by signing the document with his/her digital signature. (Bisbee '738 patent, col. 9:27-49).

As detailed in Exhibits C and D attached hereto, it is our opinion that claims 1-7, 9-17, and 19-20 of the '848 patent and claims 1-8 and 10-14 of the '322 patent are invalid under 35 U.S.C. § 103(a) as being obvious over the Bisbee '738 patent in view of the prior art admitted by the Romney patents. It is further our opinion that claims 8 and 18 of the '848 patent and claim 9 of the '322 patent are invalid under 35 U.S.C. § 103(a) as being obvious over the Bisbee '738 patent in view of the prior art admitted by the Romney patents and U.S. Patent No. 5,005,200 summarized below.

3. Houser, "Electronic Notaries Can Provide Safe Transmission", GCN, March 17, 1997.

Houser, "Electronic Notaries Can Provide Safe Transmission", GCN, March 17, 1997 ("the Houser article", which is attached hereto as Exhibit G) teaches a method for notarizing electronic documents. Specifically, an individual brings an electronic document to a digital notary for transmission to another party. The notary checks the individual's identification, and if satisfied, uses his/her digital signature to transmit the document with a note attesting to the identity of the source.

The Houser article was published less than a month after the priority date of the Romney patents, and thus does not qualify as prior art. However, this publication suggests that additional prior art may exist. A key source in the Houser article is Ken Gilpatric, who at time was a Justice Department lawyer working on the National Performance Review team. Mr. Houser had no further information for us. We have also recently been in contact with Mr. Gilpatric, who informed us that, as part of his work advising on the legal and strategic aspects of cyberspace/Internet entities and

transactions, he proposed at a semi-public meeting the idea of a digital notary. He indicated that he did not recall the date of the hearing, and that he had not heard of digital notaries prior to his suggestion. We have not located the transcript of that hearing. If the hearing occurred prior to the February 18, 1997 priority date of the Romney patents, the transcript would likely qualify as prior art under 35 U.S.C. § 102(a).

4. Fischer, U.S. Patent No. 5,005,200

Fisher, U.S. Patent No. 5,005,200 ("the Fisher patent", which is attached hereto as Exhibit H) was filed on October 4, 1993 and issued on July 25, 1995. Thus, the Fisher patent qualifies as prior art under 35 U.S.C. § 102(b).

Figure 8 of the Fisher patent is relied upon as being exemplary of the notoriously-old technique of "appending indicators" to an electronic document to delineate various sections of the document, such as the "main text" and the "digital signature".

VII. OTHER CONCERNS

During the presentation of our final results, members of the ERER task force asked whether the proposed ERER Standards might infringe the Dziewit and Bisbee '738 patents identified in our study. While we have not undertaken a full study of these patents, it is our initial determination that public use of the ERER Standards would not infringe these patents.

The Bisbee '738 patent is directed toward a "system and method for electronic transmission, storage and retrieval of authenticated documents." (Title). Unlike the Romney patents, the Bisbee '738 patent is not primarily directed toward a method of notarizing the execution of a document, but rather toward a method for providing a verifiable chain of evidence and security for the transfer and retrieval of documents in digital form." (Col. 1:11-13). The Bisbee '738 patent includes 16 claims, of which, claims 1 and 10 are independent claims. Each of claims 1 and 10 requires, amongst other limitations, two digital signatures, as well as a date and time stamp for the first digital signature. It is our understanding that the ERER Standards require only one digital signature, and will not require a date and time stamp. Thus, the ERER Standards will not necessitate infringement of the 'Bisbee '738 patent.

The Dziewit patent is directed toward a "document authentication apparatus." (Title). The Dziewit patent is concerned primarily with producing a final authenticated document using computerized techniques, such that the resulting document satisfies the legal document authentication and authenticity requirements traditionally associated with printed documents. (Col. 2:7-12). The Dziewit patent includes 20 claims, of which, claims 1 and 11 are independent claims. Because independent claims 1 and 11 have similar language, we'll address only claim 11:

> 11. In a data processing system that includes a processor that serves one or more data terminals, a method of document authentication comprising the steps of:
>
> interconnecting an individual at one of said data terminals with a document stored on said processor;
>
> disabling, in response to said individual transmitting a document authentication signal to said processor, said individual from modifying said document;
>
> authenticating said document in response to said individual transmitting a document authentication signal to said processor.

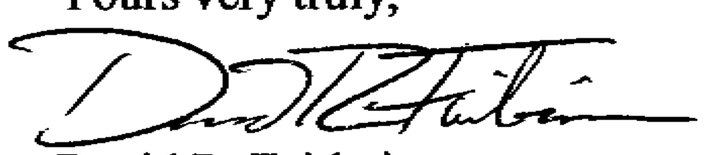
This claim appears to have a very broad scope, and for that reason, is likely invalid. However, without conducting a full analysis of the patent, including a study of the prosecution history and a review of the relevant prior art, we cannot issue such an opinion. Nonetheless, it is our initial opinion that the implementation of the ERER Standards will not necessitate infringement of the Dziewit patent. Specifically, we don't believe that the standards will require the step of "disabling" contained in the claim.

Again, this opinion regarding the Dziewit and Bisbee '738 patents is only a preliminary opinion outside the scope of the current contract between the State of Minnesota and Kinney & Lange. This opinion is based only on a limited review of the patents themselves.

VIII. CONCLUSION

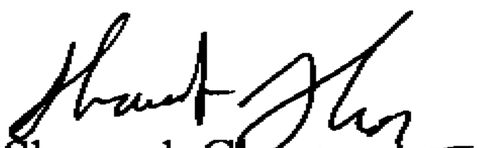
In sum, it is our opinion that the Romney patents are invalid as being obvious over the prior art. To the extent that the Romney patents are found to be valid, however, it is our opinion that the proposed ERER Standards **will not** necessitate public infringement of the Romney patents

Yours very truly,



David R. Fairbairn

Dina M. Khaled



Shameek Ghose