

Updated to reflect removal of witness requirements.  
Public Acts 19, 20, 21 and 23  
Effective March 4, 2002

## THE ROAD TO THE ALL-DIGITAL CLOSING: APPLYING ELECTRONIC SIGNATURES, UETA AND E-SIGN IN MICHIGAN REAL PROPERTY TRANSACTIONS

by Stephen L. Tupper\*

### INTRODUCTION

Gaylord, 11:04 a.m.: It's a warm summer day as vendors and carnival attractions slowly but surely transform the street outside Barb's window into the Alpenstrasse in preparation for the annual festival. Barb, a real estate lawyer, sits at her keyboard talking to her client on the speakerphone just over her shoulder on the credenza. "Elaine, I just e-mailed you all of the documents for the closing. The lenders approved the few tweaks I had on the mortgage and the e-mail I just sent you has all of the final versions attached."

\* Steve Tupper is an associate in the corporate finance practice group of Dykema Gossett PLLC's Bloomfield Hills, Michigan office, specializing in electronic commerce, technology development and licensing, mergers and acquisitions and general corporate law matters. He graduated cum laude and Order of the Coif from Wayne State University Law School. He also holds an MBA from Western Michigan University and a BA from Albion College. Prior to his legal career, Tupper was a commercial lender, recovery specialist and foreclosure real estate manager with Old Kent Bank and First of America Bank (now National City Bank) and a contract administrator with Electronic Data Systems Corp. administering major technology relationships in the finance and insurance industries. Tupper is a Certified Management Accountant (CMA), is Certified in Financial Management (CFM) and holds a Michigan associate real estate broker license.

The author is indebted to Howard Lax of Lipson, Neilson, Jacobs & Cole, P.C. for reviewing this article and to Elaine Sheehan and W. Samuel Simpson for the resources and perspective they provided.

\* All character names are purely hypothetical and none are intended to describe any actual person.

"Great," Elaine's voice comes over the speaker. "I see it now. That should be it for the documentation. I'll sign these and get them in the pipeline."

"Go ahead and do that and please make sure you copy me," says Barb before hanging up.

Manistique, 11:05 a.m.: Elaine, a manager of the land development company, Magrathea, LLC, the buyer in the transaction, hangs up the phone and watches the screen of her laptop computer, which is plugged into a phone jack in the bank's conference room. She

No longer necessary. AB 73 of  
2002. Effective March 4, 2002.

downloads each of the documents Barb has just sent and examines each one. Satisfied, she positions the pointer over the first one, a promissory note, and clicks her mouse button. A box pops up and prompts her to enter her password. This Elaine does and the document retreats to the background of her computer screen, indicating that she has digitally "signed" the document. The process is repeated with a loan agreement, a mortgage, a security agreement, UCC financing statements and other documents. Elaine moves aside and a bank officer and one of Elaine's colleagues each repeat the process, using their own passwords to witness several of the documents. A few moments later, a notary public, who has been checking Elaine's identification, takes over the keyboard and notarizes Elaine's digital signature with her own. Just before closing up her laptop, Elaine dials up her Internet service provider once again and e-mails all of the electronically signed documentation to the title company in Southfield, with copies to the bank. The bank officer picks up a phone in the conference room and, with a few words, the prearranged wire transfer is also on its way to the title company.

Kalamazoo, 11:37 a.m.: The train is blocking Main and Kalamazoo streets and the traffic is at a standstill outside the Celery City Land Holding Company's offices when the phone rings. Pat answers. It's Mark, the lawyer representing Celery City as the seller, who is calling from his Grand Rapids office.

"Hey, Pat," says Mark. "they're about ready to close. Go ahead and sign the documents and forward them to the title company. You have a notary there, right?"

"Yes. Todd's a notary and will cover us on this and, and I have Doug and Dee here to witness things," says Pat before exchanging pleasantries and hanging up. Pat clicks on a succession of documents on his screen. A warranty deed, a bill of sale and an amendment to the purchase agreement each proceed into his e-mail out-box. In much the same manner as the proceedings in Manistique, Pat, Doug, Dee and Todd each have their turns at the keyboard. At the conclusion, Pat e-mails the whole batch of electronically signed documents to the title company.

Southfield, 12:05 p.m.: Frank is watching the foursomes make their ways around the links of the golf course across Evergreen Road from the offices of Big Mitten Title Company when his computer beeps to announce incoming e-mail. It's a full set of the seller's documents from Celery City Land Holding Company. Frank had received the buyer and lender documents from Magrathea and the bank in Manistique a few moments

before and was holding them in a subdirectory on his desktop computer. Now he moves Celery City's seller documents into the same subdirectory and starts to review them.

Joanne calls to Frank from across the hall. "I just hung up from a phone call with the bank. I have the Fed ID number for Magrathea's wire transfer and we're ready to wire the funds to the seller anytime."

"Great," says Frank. "The rest of the docs just showed up, so I'll do the outgoing wire as soon as I'm done reviewing them." Frank opens each document and his computer system automatically verifies the digital signatures on each of the documents. Satisfied with both the document content and the authenticity of the digital signatures, Frank bundles all of the recordable documents into one compressed e-mail and sends it off to the Delta County Register of Deeds in Escanaba. He calls up the final closing statement on his screen, checks it one last time and then clicks on the button that sets up the wire transfer to the sellers. The amount, ABA routing numbers and account information all show on the display and Frank authorizes the transfer with his password. A moment later, Frank has finished marking up the title commitments. He digitally signs the revised commitments by swiping his "smart card" through a reader at his computer workstation and punching in a personal identification number and then e-mails copies to the parties. As soon as he receives electronic confirmation of recording from Delta County, probably before he leaves for the day, he will send out the final owner's and lender's title policies. The transaction out of his hands for the moment, he heads out for a lunch meeting at La Fendli.

Escanaba, 12:55 p.m.: Bill, just back from lunch at The Swedish Pantry, walks to the main desk at the Delta County Register of Deeds' office and notices the incoming e-mail on the terminal. He double-clicks the icon to open it and notes that the e-mail contains three files: a warranty deed, a mortgage and a UCC fixture filing, each of which bears electronic signatures. The electronic signatures on the mortgage and on the deed include those of the witnesses and notaries public. Bill launches the files, examines them for the requisite elements and determines that all is in order. Another series of keystrokes and he has verified the electronic signatures of the grantor, the mortgagee/debtor, the witnesses and the notaries and downloaded electronic certificates for each of them. The computer system automatically verifies the metes and bounds description against the county's database and determines that the parcel described in the deed and in the mortgage matches a parcel for which there is an existing tax identification number. The self-indexing

fields in the electronic documents automatically fill in the grantor, grantee and other data fields on the database input screen. Bill double-checks them and then hits the button to accept the indexing information and file the documents. The database software automatically updates the grantor, grantee and tract indexes and makes notations in two other databases: one a Uniform Commercial Code fixture filing database and the other a listing of sale transactions in the assessor's office. Electronic copies of all of the documentation, now acknowledged and electronically date-stamped, are automatically e-mailed to the title company, to other parties who requested copies and to the county's backup server across town. Filing fees are deducted from the title company's account in Chicago in an automated transaction.

Lanang, 1:58 p.m.: Like Bill, Nancy receives an e-mail. From her terminal in the Uniform Commercial Code Division of the Secretary of State's office, she opens the message and extracts the file. This one is from the bank in Marquette and it contains a financing statement covering most of the personal property of Magrathia, LLC. After a few keystrokes, the financing statement is filed and electronically acknowledged copies are immediately sent to the bank and to Elaine at Magrathia.

Somewhere on the Garden Peninsula, Delta County, 2:45 p.m.: Sam leans against the truck, squinting against the afternoon sun and the strong west winds coming in off Big Bay de Noc. Taking his palmtop computer out of his pocket, he wakes it up and checks his e-mail. There's a message from Elaine, who has forwarded a message from Big Mitten Title confirming that the transaction has closed and containing electronic copies of all of the documents. Sam launches the warranty deed and contemplates it there on the LCD screen as he involuntarily digs a little in the soil with the toe of his boot.

"So much for the land acquisition," he says to himself. "Time to get started on construction."

Science fiction? Yes and no. Recent developments in state and federal law, as well as existing technologies, make every step in the story possible, legal and binding. It remains, however, to evaluate the technology, arrive at standards and implement the systems that will make it an everyday occurrence.

This article begins by assessing Michigan's Statutes of Frauds and other barriers to electronic transactions in

Michigan. It then discusses Michigan's recent enactment of the Uniform Electronic Transactions Act ("UETA"), as well as UETA's federal counterpart and the legal framework of electronic signatures. The background then concludes with a discussion of the "digital signature," a technology and process that is likely to become the dominant form of electronic signature. The analysis begins with an assessment of how far UETA takes parties toward the elusive all-digital closing. It then addresses common objections to electronic signature systems, surveys recent efforts to implement the new technologies and assesses the reception among registers of deeds, title companies and other key players of electronic signatures. Finally, the article concludes that an environment in which all-electronic closings are commonplace is years away. Nevertheless, as long as players including the Michigan legislature, registers of deeds, title companies, lenders and others can make crucial changes and arrive at workable standards, electronic transactions will become an important part of the legal landscape in Michigan.

## I. BACKGROUND

### A. THE STATUTE OF FRAUDS AND OTHER PAPER BARRIERS TO ELECTRONIC TRANSACTION DOCUMENTATION

#### 1. STATUTE OF FRAUDS

First enacted in England in 1677<sup>1</sup> to combat "fraud and perjury,"<sup>2</sup> the Statute of Frauds requires that certain contracts be evidenced in writing in order to be enforceable. Modern codifications of the Statute of Frauds exist in the Uniform Commercial Code (the "UCC"),<sup>3</sup> the Restatement (Second) of Contracts<sup>4</sup> and in various state statutes. In Michigan, several statutes mirror portions of the original Statute of Frauds.<sup>5</sup>

Conveyance of an interest in real property is the paradigm of transactions subject to the Statute of Frauds. With exceptions for conveyances by operation of law and similar transactions, Michigan law requires writings and/or signatures in a number of real property-related transactions or parts of those transactions.

- "[C]ontracts for the leasing for a longer period than 1 year, or for the sale of any lands, or any interest in lands, shall be void, unless the contract, or some note or memorandum thereof be in writing, and signed by the party by whom the lease or sale is to be made, or by some person thereunto by him lawfully authorized in writing."<sup>6</sup>

- Conveyance of any "estate or interest in lands, other than leases for a term not exceeding 1 year [or of] any trust or power over or concerning lands, or in any manner relating thereto [requires a] deed or conveyance in writing, subscribed by the party creating, granting, assigning, surrendering or declaring the same, or by some person thereunto by him lawfully authorized by writing."<sup>7</sup>

"Deeds executed within this state of lands, or any interest in lands, shall be executed in the presence of 2 witnesses, who shall subscribe their names to the deed as such and the persons executing the deeds may acknowledge the execution before any judge, clerk of a court of record, or notary public within the state."<sup>8</sup>

- "An agreement, promise, or contract to pay a commission for or upon the sale of an interest in real estate"<sup>9</sup> requires a "note or memorandum of the agreement, contract, or promise . . . in writing and signed with an authorized signature by the party to be charged with the agreement, contract or promise."<sup>10</sup>

#### 2. RECORDING REQUIREMENTS

Even if a conveyance meets the writing requirements of the Statute of Frauds, the recording statutes provide further hurdles. It is well-settled in Michigan that an instrument conveying title is effective as between two parties even if the instrument fails to meet the requirements for recording.<sup>11</sup> However, such a conveyance is "void as against any subsequent purchaser in good faith and for valuable consideration . . . whose conveyance [is] first duly recorded."<sup>12</sup> A grantee might have perfectly good title as against his or her grantor but, unless the grantee records the conveyance, the grantee must live with the risk that a subsequent bona fide purchaser from the grantor will divest the grantee of title. Even if the grantee is willing to take the risk, few title companies will accept such a risk and lenders, in turn, depend on assurances from title companies. Recording, therefore, is a *de facto* requirement in real property transactions.

Recording brings with it yet another set of writing and/or signature requirements. Michigan's primary recording statute<sup>13</sup> does not require writings and manual signatures *per se*, but the context of the statute clearly contemplates paper documents with manual signatures. Names of persons executing the instruments, as well as the names of each witness and notary, must be "printed, typewritten or stamped"<sup>14</sup> and signatures may not be "superimposed upon the name so as to render either

illegible."<sup>15</sup> No "discrepancy [may] exist between the name of a person as it appears either in the body of the instrument or in the acknowledgment or jurat, as printed, typewritten or stamped upon the instrument beneath the signature, and in the signature of that person."<sup>16</sup>

Documents in electronic form are not "printed, typewritten or stamped" and electronic signatures cannot logically be "superimposed" upon anything, let alone in such a way as to make the thing or the electronic signature illegible. Discrepancies will almost certainly exist between the name of a person as it appears in the document and the electronic signature because the electronic signature will, in all likelihood, be the result of a mathematical algorithm and not even comparable to a text-based rendition of the name.

Further, the statute requires that instruments be on paper by specifying requirements for paper size, margins, font size, ink color, paper color and paper weight.<sup>17</sup>

### B. THE BASICS OF UETA AND E-SIGN AS THEY RELATE TO REAL PROPERTY TRANSACTIONS

#### 1. MICHIGAN'S ENACTMENT OF UETA

Michigan's enactment of UETA<sup>18</sup> became law on October 16, 2000.<sup>19</sup> Michigan adopted UETA as promulgated by the National Conference of Commissioners on Uniform State Laws ("NCCUSL") virtually verbatim.<sup>20</sup> Both houses of the Michigan legislature voted to give the act immediate effect and it "applies to any electronic record or electronic signature created, generated, sent, communicated, received, or stored on or after"<sup>21</sup> October 16, 2000.

#### 2. UETA'S FEDERAL COUNTERPART: E-SIGN'S ROLE

UETA's federal counterpart, called the Electronic Signatures in Global and National Commerce Act, or "E-Sign,"<sup>22</sup> became effective on October 1, 2000. E-Sign amounts to a federal enactment of the major points of UETA.

As federal law, E-Sign's effect is both greater and less than that of UETA. United States Constitutional considerations and E-Sign's own terms limit its application to "transaction[s] in or affecting interstate or foreign commerce."<sup>23</sup> The federal government's ability to regulate interstate and foreign commerce is broad, so virtually any transaction that is transmitted across the internet will

Changed by AM-23  
of 2002 of March  
2-4-2003

likely be covered. On the other hand, the United States Constitution limits the federal government's role in matters that are entirely intrastate or that deal with most subjects other than commerce.

Federal preemption was one of the primary motivators for E-Sign. By the middle of 2000, individual states were already gravitating to one of three models: a strictly digital-signature-based infrastructure (as in Utah)<sup>26</sup>, the technology-neutral UETA (as in 18 states as of June 30, 2000 and as in 23 states by the time of this writing) and measures that settled somewhere in between (as in Illinois<sup>27</sup>). Without federal preemption, the result would have been an electronic Tower of Babel where the states with the most rigorous legal infrastructures would have been able to set the *de facto* standard for less rigorous states. States with no electronic signature laws, like Michigan, would have been left behind.

E-Sign does not preempt state enactments of UETA as long as those enactments stay true to NCCUSL's original language.<sup>28</sup> Departures from the NCCUSL language have to meet a fairly tough standard in E-Sign in order to avoid preemption.<sup>27</sup> As a result, E-Sign will not preempt verbatim enactments of UETA, like Michigan's, but will preempt enactments that included substantial changes, such as those enacted in California.<sup>28</sup>

State law tends to govern real property transactions,<sup>29</sup> so UETA will control most aspects of real property transactions. UETA will also usually control in intrastate transactions in personal property (e.g., transfer of related personally and assignments of service contracts) and, to the extent non-realty transactions involve "intra-state or foreign commerce," E-Sign will impose substantially the same rules.

### 3. ELECTRONIC SIGNATURES AND RECORDS: UETA'S FRAMEWORK

UETA defines an electronic signature as "an electronic sound, symbol, or process attached to or logically associated with a record and executed or adopted by a person with the intent to sign the record."<sup>30</sup> This is a very broad and technology-neutral definition. It could include a digitized recording of the signer's voice, a bitmapped picture, a typed name, a scanned copy of a signer's handwritten signature, a biometric process such as a retinal scan or thumbprint verifier, an encoding system such as a so-called "digital signature" or any one of hundreds of other things.

A "record," incidentally, is "information that is inscribed on a tangible medium or that is stored in an electronic or

other medium and is retrievable in perceivable form."<sup>31</sup> Note that a paper document could also be a record.

UETA proceeds from these basics to give electronically-signed records legal effects. It provides that:

- (1) A record or signature shall not be denied legal effect or enforceability solely because it is in electronic form.
- (2) A contract shall not be denied legal effect or enforceability solely because an electronic record was used in its formation.
- (3) If a law requires a record to be in writing, an electronic record satisfies the law.
- (4) If a law requires a signature, an electronic signature satisfies the law.<sup>32</sup>

UETA contemplates notarization of electronic signatures. If a law requires a signature or record to be notarized, acknowledged, verified, or made under oath, the requirement is satisfied if the electronic signature of the person authorized to perform those acts, together with all other information required to be included by other applicable law, is attached to or logically associated with the signature or record.<sup>33</sup>

UETA also addresses the status of such documents as originals. "If a law requires a record to be presented or retained in its original form, or provides consequences if the record is not presented or retained in its original form, that law is satisfied by an electronic record"<sup>34</sup> if the record does both of the following: "(a) Accurately reflects the information set forth in the record after it was first generated in its final form as an electronic record or otherwise [and] (b) Remains accessible for later reference."<sup>35</sup>

UETA covers logistical and notice issues as well, including allocation of risk of errors<sup>36</sup> and when and where a record is deemed to have been sent or received.<sup>37</sup>

### 4. DIGITAL SIGNATURES: THE MOST LIKELY STANDARD

#### a. How Digital Signatures Work

The technology-neutral language of both E-Sign and UETA leaves it to the markets and to units of government<sup>38</sup>

to determine their own electronic signature standards. The early favorite among forms of electronic signature is the so-called "digital signature." A digital signature uses an "asymmetric cryptosystem" to encode messages using encryption methods that most industry experts consider to be exceedingly difficult to break.

Each user of a digital signature system needs a pair of "keys." The keys are actually long strings of characters that are stored on computers.<sup>39</sup> One key of the pair is known only to the user and exists solely on the user's computer. This is a "private key." The private key's counterpart is, intuitively enough, a "public key." The user's public key is usually stored in a publicly-accessible database. Digital signature service providers generate these key pairs at the time a user applies for a digital ID and certificate. The provider sends the private key to the user and posts the public key to the provider's public key database. If requested by the user or a third party, the provider will generate an electronic certificate identifying the user's public key as belonging to the user. Providers generate these certificates automatically when the recipient of a user's transmission verifies the transmission with the provider over the Internet. The issue process is shown graphically in Figure 1.

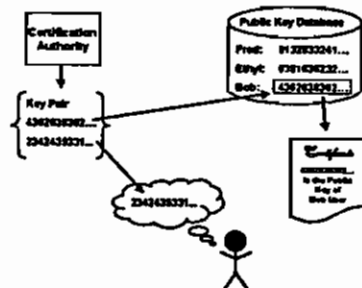


Figure 1. The certification authority generates a key pair. One of the keys will be the public key and the other will be the private key. It does not matter which. The private key is sent to the user, who maintains it on a computer, disk, smart card or other device. The public key is posted in an online database accessible to the public. Whenever required, the certification authority will issue a certificate attesting to the fact that the public key belongs to the user. The user is now able to electronically sign instruments with his private key. The certificate identifies instruments as having been signed by him.

The actual digital signature is a code that is integrated into a message. The sender of a digitally-signed message runs the message through a computer algorithm called a "hash function" using his private key and the receiver's public key. The result of the hash function is the digital

signature. Because the keys are very long strings of characters and because the resulting digital signature is also very long, it is excruciatingly improbable that two different cogent messages would yield the same digital signature when encoded with the same key and equally improbable that a message, once altered, would yield the same digital signature. In the example in Figure 2, the sender electronically signs a warranty deed and sends it to the receiver.

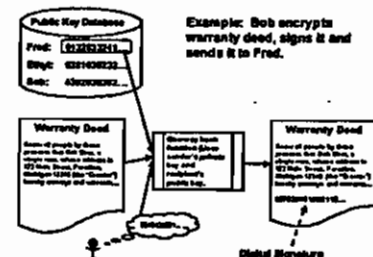


Figure 2. Sender electronically signs and sends a warranty deed to receiver.

When the receiver receives the warranty deed (including the message containing the warranty deed (including the digital signature) through a similar hash function, this time using the sender's public key and the receiver's private key. The hash function using these keys (1) will verify the message as genuine only if the message was initially encoded using the sender's private key, thus attributing the message to the sender, (2) will only work properly if the message has not been altered since the sender sent it, thus assuring the integrity of the message's content and (3) works virtually every time. Figure 3 illustrates this process.

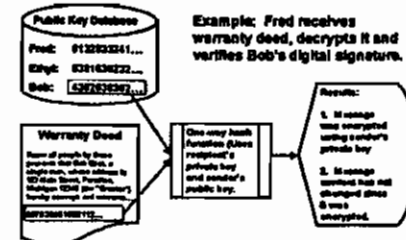


Figure 3. The receiver runs the message through another hash function, thus verifying the sender's identity and the integrity of the message. In this case the receiver, which could be a title company or a register of deeds, has received a warranty deed with a legally enforceable signature.

Digital signature technology allows for several different permutations of this process. The process just explained will send the deed to the receiver in an encrypted form that only the receiver may open and read. If encryption is not required, the sender could just as easily run the hash function using only the sender's private key. Using the sender's public key, the receiver would still be able to verify that the sender sent the document and that the document had not changed since the sender sent it, but the document would be readable by anyone else who received it by using the sender's public key which is, by definition, publicly available.

Digital certificates are not yet widely held,<sup>40</sup> but providers are hopeful that the user base will soon reach critical mass. Digital certificates are fairly inexpensive. The technology itself is based fundamentally on properties of numbers. Numbers themselves are plentiful and free. The real costs are incurred in setting up user accounts, administering digital certificates and the like. One can have a VeriSign digital ID for secure e-mail free for 60 days and then \$14.95 per year<sup>41</sup> or a ZixMail digital ID free for 30 days and then \$18 per year.<sup>42</sup> These are basic IDs that guarantee only a unique username and do not involve any verification of an individual's identity. Higher-security digital IDs that involve verification procedures are available for higher fees.<sup>43</sup>

Digital signatures are the early leaders in the race to an industry standard because they offer a high degree of security and reliability. They are also more readily attributable to a party than other electronic signature systems. Several leading providers of digital certificates and signature systems have already emerged and it appears likely that these providers will move rapidly toward an industry standard.

#### b. Digital Signatures and Security

The digital signature methodology is known to cryptographers as an "asymmetric cryptosystem" or "public key cryptosystem."<sup>44</sup> Though the mathematical principles behind such a system are beyond the scope of this article, it is worthwhile to note that technical experts in the field regard such systems as efficient and very secure.<sup>45</sup> Although it is technically possible, given sufficient computer resources and enough time, to derive a private key from a digitally signed message and a public key, cryptographers regard this process as "computationally infeasible."<sup>46</sup> In other words, the economic cost of discovering a private key outweighs any economic benefit a code-breaker might receive from so doing.<sup>47</sup>

That said, digital signatures are not without risk. The digital signature system is very good at verifying that a given

private key was used. The system is not very good at verifying that a specific person used the private key. This risk in digital signature systems presents itself whenever the presumptive link between the private key and the user is broken. The security of a digital signature scheme is entirely dependent upon the signer keeping the private key to him or her self and using it only when intending to sign a contract or conveyance.

Digital signature systems also change the nature of the risk-return tradeoff in using such systems. Digital signature systems are almost impossible to beat when it comes to the encryption and verification functions. The trade-off for this reduced chance of fraud occurring in the first place is a dramatic increase in the amount of harm that can result from misappropriation of a private key if that does occur.

This happens for two reasons. First, digital signatures, by their nature, speed up the transaction process. A thief or vandal can steal or destroy much more in a shorter time if he or she succeeds in obtaining another person's digital signature. Second, the expanded scope of transactions that UETA enables provides a larger playing field for identity thieves. One can imagine a scenario in which a particularly bold identity thief might try to sell a victim's house; an event much more severe than the current worst-case paradigm of having a thief run up one's credit card bills.

The legislature can do little to maintain the security of digital signatures once private keys are issued. One can, however, take additional steps to verify a person's identity at the time a digital certificate and private key are issued and can at least be assured that a given digital signature is associated with a given person. Most states that have addressed the issue have put this authority into the hands of trusted third parties,<sup>48</sup> usually the issuer of the digital certificate and private key. Utah, the first state to enact digital signature legislation, provided the model for other states by enabling certification authorities,<sup>49</sup> establishing duties of certification authorities and users,<sup>50</sup> and providing for recognition and liability of key repositories.<sup>51</sup> The Michigan legislature once considered a near-equivalent to the Utah law<sup>52</sup> and it may wish to again consider the relevant parts of that legislation.

## II. ANALYSIS

### A. HOW FAR DOES UETA GO TOWARD ENABLING THE ALL-DIGITAL CLOSING?

UETA takes parties most, but not all, of the way to all-digital closings. Electronic conveyances of real property are binding upon the parties to the transaction.<sup>53</sup> The

process stops at the register of deeds' door, however, because parties, lenders and others cannot yet record electronic conveyances and be thereby assured of protection from a subsequent bona fide purchaser.<sup>54</sup>

The barriers are twofold. First, the Michigan recording statute requires paper documents. Does the enactment of UETA preempt or repeal such requirements? Michigan courts will attempt, whenever possible, to construe two statutes as consistent but, when the inconsistency is irreconcilable, the later-enacted statute of the two is considered to repeal the inconsistent parts of the earlier-enacted statute.<sup>55</sup> Is this such a situation? There is enough ambiguity that a cautious register of deeds could be forgiven for waiting for further action by the legislature.

Second, UETA by its own terms "does not require a governmental agency or official of this state to use or permit the use of electronic records or electronic signatures."<sup>56</sup> Registers of deeds are under no obligation to accept electronic documents. Short of further legislative action, it is up to the registers of deeds to facilitate the recording of electronic conveyances.

### B. ELECTRONIC SIGNATURES VS. PAPER TRANSACTIONS: ADDRESSING THE OBJECTIONS

The reader could be forgiven for surmising at this point that the author supports implementation of electronic signature systems for transactions between parties and with units of government—and with all deliberate speed at that. Indeed the author does. However, the author's viewpoint is far from the only viewpoint on the subject.

Electronic signatures have their critics as well.<sup>57</sup> Objections include challenges to the signature process, the evidentiary trail electronic signatures create, and cost considerations. In jurisdictions that enable certification authorities, some disagree with the allocation of risks and responsibilities.<sup>58</sup> Still others highlight potential issues with the technology itself.<sup>59</sup>

Michigan has not yet enabled certification authorities, so the primary issues to address are the signatures themselves, evidentiary trails, and cost.

### 1. DIGITAL SIGNATURES VS. MANUAL SIGNATURES

Critics frequently cite the formalism of the manual signature and its role in solemnizing transactions<sup>60</sup> and point out that electronic signatures do not satisfy this need

as effectively. In response, it is important to note that electronic signatures are not as great a departure from present practice as one might think. In fact, the present law regarding what constitutes an effective signature is at least as broad as the principles in UETA.

Consider the UCC definition of "signed," which "includes any symbol executed or adopted by a party with present intention to authenticate a writing."<sup>61</sup> The breadth of the "any symbol" language,<sup>62</sup> coupled with the intent requirement, is very similar to the UETA scheme. Further, even a manual signature need only be "a cross or other mark by the [signer] as and for his signature"<sup>63</sup> and that mark need not even be made by the signer himself.<sup>64</sup>

Additionally, the fundamentals behind electronic substitutes for manual signatures are not new to Michigan law. As early as 1975, a Michigan Attorney General opinion declared that a credit union customer's use of a personal identification number at an automated teller machine to draw on a line of credit did not violate Michigan law governing procedures for drawing on such loans.<sup>65</sup>

If any symbol or mark, whether made by the signer or not, can qualify as a signature under current law as long as it is adopted in some way by the signer, how inferior could an electronic system possibly be? Especially if that electronic system contains reliable attribution technology?

### 2. UNAVAILABILITY OF MANUAL SIGNATURES AND PAPER DOCUMENTS FOR FORENSIC DOCUMENT ANALYSIS

Digital signatures are not subject to the kind of qualitative analysis that one might apply to the handwriting of a manual signature. With a digital signature, either the hash function produces the right result or it does not. Critics of digital signatures point out that the nature of digital signatures prevents application of forensic document examination techniques to an allegedly forged document.

This is correct, but few critics realize how little they are giving up in foregoing forensic document analysis. The literature addressing the accuracy of forensic document analysis is limited, but it suggests that this analysis is minimally helpful in identifying forgeries. The most generous available study found that handwriting analysis identifies the signing party correctly 94% of the time if inconclusive results are not considered and only 85% of the time if inconclusive results are included,<sup>66</sup> a performance hardly topped by such inadmissible evidence as polygraph examination.<sup>67</sup> Further, a series of unpublished Forensic Science Foundation studies from 1975 to 1987, taken

marketability by making assignment of mortgage interests quick and easy.

Although MERS is well-suited to its functions in the secondary mortgage market, each MERS-registered loan is still reliant on a paper mortgage or assignment filing. Additionally, it seems unlikely that a solution like MERS could work in the decentralized, low-volume-per-participant world where individual transactions among buyers and sellers occur.

## 2. SUCCESSFUL EXPERIMENTS AND PILOT EFFORTS

Various parties have conducted partial and full-up electronic transactions in recent years.

- In July of 1999, iLumin Corporation<sup>61</sup> helped to accomplish the first completely electronic home refinance under Utah's pre-existing digital signature law.<sup>62</sup>
- Shortly after the October 1, 2000 effective date of E-Sign,<sup>63</sup> iLumin and others, including Bank of America, Old Republic National Title Company and the Essex County, Massachusetts Register of Deeds, completed a full-up purchase money closing, complete with a mortgage and related documents.<sup>64</sup>
- Freddie Mac, Mountain America Credit Union, CUNA, the Utah County, Utah Register of Deeds and others completed a full-up home sale and purchase that same month.<sup>65</sup>
- eOriginal, another provider of online closing services, has closed 25 mortgages electronically in Broward County, Florida, which also already recognized digital signature technology.<sup>66</sup>

No completely electronic transactions involving registers of deeds have yet taken place in Michigan.

## 3. THE LEVEL OF INTEREST IN THE MICHIGAN REAL ESTATE COMMUNITY

Despite the success of early pilot projects, the level of enthusiasm in the potential user base is something short of a groundswell. A recent ZDNet online poll indicates that 37% of about 7,000 respondents had already used electronic signatures or expected to do so within a year.<sup>67</sup> Another 38% expected longer time frames and 25% of the respondents indicated that they did not trust the technology and would not use it.<sup>68</sup>

In an effort to understand the climate, the author conducted a very unscientific and highly subjective telephone poll of real estate lawyers, title companies and registers of deeds from around the state.<sup>69</sup> Very few people identified any real enthusiasm in the Michigan real estate community for electronic signatures. It appeared that, in general, representatives of title companies seemed the most enthusiastic and representatives of registers of deeds seemed the least enthusiastic. Relatively few interviewees appeared to have an understanding of the technology or the effect of UETA or E-Sign. Nevertheless, most were aware that electronic signatures in general were on the horizon and seemed to regard their arrival as inevitable.

That said, several organizations are well-situated to investigate and carry out the required changes. The Michigan Register of Deeds Association has appointed an ad hoc committee on technology and e-commerce that includes representation from seven counties covering both urban and rural areas. Conversations are also underway among the members of the Michigan Land Title Association, several registers of deeds, the Michigan Secretary of State, the State Bar of Michigan's Real Property Law Section, and other important constituencies. These conversations have resulted in the formation of the Document Recording (Paper & Electronic) Joint Task Force, which has met several times in Lansing early this year.

Other organizations are setting standards nationally. These include the Property Records Industry Joint Task Force,<sup>70</sup> which has substantial Michigan representation, and the Electronic Financial Services Council.<sup>71</sup>

## E. NEXT STEPS

The future of electronic transactions in Michigan is in the hands of a few vital constituencies.

- **The Legislature.** The Michigan legislature can and probably should amend the recording act<sup>72</sup> to harmonize it with UETA. Requirements as to size, weight and other aspects of paper documents remain very appropriate, but the statute should make it clear that the requirements apply only when paper documents are used (and not when electronic documents are used).
- **Registers of Deeds.** Registers of deeds are closest to the day-to-day maintenance of the state's real property records and are best situated to determine workable requirements and procedures. Any initiative should (and probably must) include them.

together, revealed that forensic document examiners made correct identifications 45% of the time, erred partially or completely 36% of the time and failed to reach a result 19% of the time.<sup>68</sup>

In fairness, it is possible and even likely that there exist in Michigan skilled and very accurate practitioners of forensic document analysis. Nevertheless, the objective literature infers, at the very least, that such practitioners are scarce or that few have participated in the studies.

The digital signature regimen identifies authentic signatures 100% of the time. Admittedly, digital signatures carry the authentication issues discussed in Section I(B)(4)(b) *supra*, but these issues are mitigated for the time being by Michigan's notary and witness requirements and, at worst, they arguably pose no greater risk than the status quo's manually-signed documents.

## 3. COST

A full discussion of the methodologies and costs of electronic filing and signature verification systems is beyond the scope of this article. Suffice it to recognize that implementing such systems adds to an already long list of financial demands on registers of deeds, but that electronic recording has the potential to save money in the long run.

The cost of storage media, for example, has fallen drastically over the last ten years. For example, the purchase price for a computer hard disk drive has come down from \$7 per megabyte ("MB") in 1990 to \$0.52 per MB in 1995 to \$0.08 per MB in August of 2000.<sup>69</sup>

## C. THE ROLES OF NOTARIES PUBLIC AND WITNESSES

Michigan requires for recording purposes that all conveyances be acknowledged before a notary public.<sup>70</sup> Further, Michigan is one of only eight states that require two or more witnesses to sign real property conveyances.<sup>71</sup>

Electronic signature laws in several states have eliminated notary acknowledgment requirements,<sup>72</sup> largely on the theory that the application process through which a signer must go in order to obtain a digital certificate is sufficiently rigorous to verify the signer's identity. This same logic would also seem to support elimination of witness requirements.

Representatives of the notary public community object with varying degrees of vigor to such propositions.<sup>73</sup> Notary organizations point out that having a disinterested third

party personally present improves the chances of identifying a forger using the private key of another.<sup>74</sup> They further assert that notaries can observe signing parties' behavior for signs of duress and lucidity and that such observations serve as a further basis for the validity of signatures.<sup>75</sup>

Indeed, notaries and witnesses can play a role in attribution of electronic signatures under UETA's framework. "An electronic record or electronic signature is attributable to a person if it is the act of the person."<sup>76</sup> UETA does not restrict the means by which a party can prove attribution, but it relies primarily on "the efficacy of any security procedure applied to determine the person to which the electronic record or electronic signature was attributable."<sup>77</sup> Notaries and witnesses provide human backup to electronic "security procedures."<sup>78</sup>

So far, the Michigan legislature has not acted to change the roles or requirements for notaries and witnesses and these issues do not yet confront real property professionals. However, depending upon the success of experiments in other jurisdictions, Michigan may eventually take up these issues.

## D. EFFORTS TO IMPLEMENT ELECTRONIC SIGNATURES OR ALTERNATIVE TECHNOLOGIES TO DATE

### 1. MERS

Several players in the real estate industry nationwide have taken matters into their own hands and done an end run around some of the difficulties at the level of the register of deeds. Mortgage Electronic Registration Systems, Inc. ("MERS") is a Delaware corporation owned by a broad-based group of title companies, lenders, insurers, Fannie Mae and Freddie Mac.<sup>79</sup> Members of the MERS system either have borrowers execute mortgages in favor of MERS as nominee of the lender<sup>80</sup> or assign their existing recorded mortgages to MERS.<sup>81</sup> Once a mortgage is in MERS' name, member organizations need only assign the mortgage's position among themselves according to MERS' rules and regulations. Foreclosures are handled in MERS' name and MERS has local counsel in each state.<sup>82</sup>

The primary motivator for MERS participation is cost savings in secondary market activities. Because only one document is actually recorded with the relevant register of deeds and subsequent assignments are not subject to recording fees, MERS claims that its members save \$43.50 per loan in a typical dual assignment case, about \$21.50 per loan in a typical correspondent case and about \$3.00 per loan in a typical direct transaction case.<sup>83</sup> MERS registration also helps improve portfolio liquidity and

No longer true. M 23 of 2000 - Michigan statute.

• “Power Users.” As with any other product or service, intensive users of a system are best able to articulate the needs of the user community. Title companies, lenders, real property lawyers and other “power users” of the real estate recording system must play a role in assuring that practices facilitate business processes that move transactions along as efficiently as possible. Title plants – parallel collections of documents in registers of deeds’ offices – and registers of deeds would mutually benefit from collaboration.

These players face a number of issues and decisions. UETA’s technology neutrality presents a number of tasks and the constituencies must meet the following challenges.<sup>34</sup>

- Determine standards for document filing (e.g., digitally-scanned pictures vs. machine-readable text using optical character recognition technology or, ideally, both).
- Determine information formatting so that key information such as grantor, grantee and legal description, etc. can be automatically indexed upon receipt of a document.
- Determine when to deem electronically-transmitted records received, especially considering that such records might arrive at a register of deeds’ office throughout the night and on weekends and holidays.
- Decide whether to reduce the portion of documents actually recorded. (Considering that standard forms such as the Fannie Mae/Freddie Mac residential mortgage are recorded repeatedly and often, is it really necessary to record the entire form hundreds or even thousands of times each month? Could a master form be archived and then logically associated with the grantor, grantee, legal description and other information that actually changes from transaction to transaction?)
- Consider incentives for electronic filers to speed conversion, such as reduced recording fees or immediate confirmations if the filer uses automatically-indexing documents. The rationale is similar to that used by the United States Postal Service for mailers who pre-sort their mail.
- Determine standards for electronic signatures, including type (digital signature vs. other technologies), length and standards for third-party digital certificate providers.
- Determine the degree to which requirements may vary from county to county. This is a crucial issue because local variations could create a virtual Tower of Babel, with the most stringent counties setting the *de facto*

standard. Certainly, economies may result from statewide uniformity and those economies could accrue to the registers of deeds, lenders and title companies and, ultimately, consumers. The Property Records Industry Joint Task Force has, in a recent discussion draft of a technical white paper, tentatively recommended implementing national standards and provided persuasive justifications for doing so.<sup>35</sup>

This is by no means a comprehensive list of issues, but it provides some sense of the tasks before these parties.

### III. CONCLUSION

UETA and E-Sign allow creation of enforceable conveyances of interests in real property, at least between parties. However, the effectiveness of the new laws is limited in Michigan by parties’ present inability to record electronic conveyances. Responses so far to the new technology have been lukewarm, but key constituencies appear ready to begin the process of specifying standards and working out the processes that will allow Michigan real estate transactions to enter the information age.

### ENDNOTES

1. 6 *SM WILLIAM HOLDSWORTH, A HISTORY OF ENGLISH LAW* 379 (1924).
2. For a shorter history of the Statute of Frauds, see *Thompson Printing Machinery Company Co. v B.F. Goodrich Co.*, 714 F.2d 744 (7th Cir. 1983).
3. See UCC Sections 2-201 and 1-206 (1995).
4. See RESTATEMENT (SECOND) OF CONTRACTS § 110 (1981).
5. See, e.g., MICH. COMP. LAWS ANN. §§ 566.132 (general listing of agreements that require signed writings for validation), 566.106 (conveyance of interest in lands other than one year lease), 566.134 (auction sales), 566.135 (representations concerning character, business or credit of another) and 566.222 (grant or assignment of trust) (West 1996).
6. MICH. COMP. LAWS ANN. § 566.108 (2000).
7. MICH. COMP. LAWS ANN. § 566.106 (2000).
8. MICH. COMP. LAWS ANN. § 565.8 (2000).
9. MICH. COMP. LAWS ANN. § 565.132(1)(e) (2000).
10. MICH. COMP. LAWS ANN. § 565.132(1) (2000).
11. See *Irvine v Irvine*, 337 Mich. 344, 352 (1953).
12. MICH. COMP. LAWS ANN. § 565.29 (2000).
13. MICH. COMP. LAWS ANN. § 565.201 to 203 (2000).

14. *Id.* § 565.201(1)(a), (c) and (d).
15. *Id.* § 565.201(1)(e).
16. *Id.* § 565.201(1)(b).
17. *Id.* § 565.201(1)(h).
18. MICH. COMP. LAWS §§ 450.831 to 450.849 (2000).
19. 2000 Mich. Pub. Acts 305.
20. The University of Pennsylvania maintains an official archive of NCCUSL’s final acts. UETA resides at <<http://www.law.upenn.edu/bll/ulc/lnact99/1990/ueta99.htm>>.
21. MICH. COMP. LAWS § 450.834 (2000).
22. S. 761, 106th Cong. (2000) (enacted) (hereinafter cited as “E-Sign”).
23. E-Sign, Title I, § 101(a).
24. Utah Code Ann. §§ 46-3-101 to 504 (1996) (as amended by S. 188, 52d Leg., Gen. Sess. (Utah 2000)).
25. See, e.g., 5 ILL. COMP. STAT. 70/1.15 (2001) (statutory construction); 5 ILL. COMP. STAT. 175/1-101 to 99-1 (2001) (Illinois’ Electronic Commerce Security Act); 625 ILL. COMP. STAT. 5/3-100.1 (2001) (vehicle titles); 720 ILL. COMP. STAT. 5/17-3 (2001) (criminal code; forgery).
26. See E-Sign, Title I, § 102.
27. See E-Sign, Title I, § 102(2).
28. CAL. BUS. & PROF. CODE §§ 1633.1 to 1633.17 (2000).
29. See *U.S. Truck Co. v Pennsylvania Surety Corporation*, 259 Mich. 422, 425 (1932).
30. MICH. COMP. LAWS ANN. § 450.832(h) (2000).
31. MICH. COMP. LAWS ANN. § 450.832(m) (2000).
32. MICH. COMP. LAWS ANN. § 450.837 (2000).
33. MICH. COMP. LAWS ANN. § 450.841 (2000).
34. MICH. COMP. LAWS ANN. § 450.842(4) (2000).
35. MICH. COMP. LAWS ANN. § 450.842(1) (2000).
36. MICH. COMP. LAWS ANN. § 450.840 (2000).
37. MICH. COMP. LAWS ANN. § 450.845 (2000).
38. See MICH. COMP. LAWS ANN. § 450.848 to 450.849 (2000).
39. Keys can also be stored on other devices, such as the magnetic strips on credit cards and in microchips small enough to fit into credit cards and other devices. The Mobil “Speedpass” used for charging gasoline purchases is an example of a device carrying such a chip.
40. Of the current major digital signature providers, Xcert has about 8 million certificates outstanding (see *About*

*Xcert* (visited January 13, 2001) <<http://www.xcert.com/com/index.html>> and VeriSign has provided certificates for about 400,000 servers (see *VeriSign, Inc. Fact Sheet* (visited January 13, 2001) <<http://corporate.verisign.com/about/fact.html>>.)

41. See *Digital IDs for Secure E-Mail* (visited January 13, 2001) <<http://www.verisign.com/products/class1/index.html>>.
42. See *What is ZixMail?* (visited January 13, 2001) <<http://www.zixmail.com/whatis.html>>.
43. According to VeriSign, its:
  - Class 2 Digital IDs provide identity assurance by requiring third-party verification of your name, address, and other personal information. At this time, Class 2 Digital IDs are only available to residents of the United States and Canada. VeriSign’s automated enrollment system checks the information you provide against a consumer database maintained by Equifax. Expected uses of Class 2 Digital IDs for browsers include most online purchases and online subscriptions.
  - Introduction to Client Digital IDs™* (visited January 15, 2001) <<http://www.verisign.com/repositories/browidint.html#class>>.
44. See generally CRYPTOGRAPHY’S ROLE IN SECURING THE INFORMATION SOCIETY 367-370 (Kenneth W. Dam and Herbert S. Lin eds., 1996); MAH YOUNG RHEE, CRYPTOGRAPHY AND SECURE COMMUNICATIONS, Ch. 10 (1994).
45. See ABA Committee on Information Security, Science and Technology Section, *Digital Signature Guidelines* at 8-13 (1996). This article relies on several of the same technical references.
46. See BRUCE SCHNEIER, APPLIED CRYPTOGRAPHY: PROTOCOLS, ALGORITHMS AND SOURCE CODE IN C § 7.5 (2d ed. 1996).
47. *Id.*
48. See generally A. Michael Froomkin, *The Essential Role of Trusted Third Parties in Electronic Commerce*, 75 OR. L. REV. 49 (1996).
49. UTAH STAT. ANN. §§ 46-3-201 to 204 (2000).
50. UTAH STAT. ANN. §§ 46-3-301 to 310 (2000).
51. UTAH STAT. ANN. §§ 46-3-501 to 502 (2000).
52. See S. 204, 89th Leg., Reg. Sess. (Mich. 1997); S. 939, 88th Leg., Reg. Sess. (Mich. 1996).
53. See Section I(A)(2), *supra*.
54. *Id.*
55. See *Valentine v McDonald*, 3714 Mich. 138, 144 (1963); *Ameritech Michigan v Michigan Public Service Commission*, 599 Mich. App. 523, 527 (1999).

56. *MICH. COMP. LAWS ANNOT.* § 450.838(3) (2000).
57. See Jesse Berst, *Sign of Trouble: The Problem With E-Signatures* (July 17, 2000) <<http://www.ednet.com/anchordesk/stories/story/0.10738.2604099.00.htm?chkt=xdhnews02>>.
58. See, e.g., C. Bradford Biddle, Note, *Misplaced Priorities: The Utah Digital Signature Act and Liability Allocation in a Public Key Infrastructure*, 33 *SAN DIEGO L. REV.* 1143 (1996) (addressing the Utah Digital Signature Act).
59. Christy Tinnes, Note, *Digital Signatures Come to South Carolina: The Proposed Digital Signature Act of 1997*, 48 *S.C. L. REV.* 427 (1997) (advocating passage of proposed digital signature legislation in South Carolina, but highlighting some difficulties, including treatment of the technology under the International Traffic in Arms Regulations, 22 *C.F.R.* § 121.1 (1996)).
60. See generally Lon L. Fuller, *Consideration and Form*, 41 *COLUM. L. REV.* 799 (1941), which contains an excellent discussion of the evidentiary, cautionary and channeling functions of the signature and its counterparts.
61. *MICH. COMP. LAWS ANNOT.* § 440.1201(39) (2000).
62. Indeed, NCCUSL states that
- [t]he inclusion of authentication in the definition of "signed" is to make clear that as the term is used in this Act a complete signature is not necessary. Authentication may be printed, stamped or written; it may be by initials or by thumbprint. It may be on any part of the document and in appropriate cases may be found in a billhead or letterhead. No catalog of possible authentication can be complete and the court must use common sense and commercial experience in passing upon these matters. The question always is whether the symbol was executed or adopted by the party with present intention to authenticate the writing.
- UCC § 1-201, official comment 39 (1995).
63. *McGinnis v Kempsey*, 27 *MICH.* 363, 375 (1873).
64. "The mark is only evidence indicative of [the signer's] act and intention to adopt the signature as his own. But this may as well be shown by any other clearly expressed act as by his mark." *Just v Wise Twp.*, 42 *MICH.* 573, 577 (1880).
65. *MICH. OP. ATT'Y GEN.* 1975, No. 4864 at 60.
66. J. Widachi and F. Horvath, *An Experimental Investigation of the Relative Validity and Utility of the Polygraph Technique and Three Other Common Methods of Criminal Identification*, 23 *J. FORENSIC SCI.* 596, 596-600 (1978) (conducting a study that compared the reliability of polygraph tests, eyewitness identification, handwriting analysis, and fingerprinting); *United States v Scheffer*, 523 *U.S.* 303, 334 (1998) (Stevens, J., dissenting).
67. *Id.*
68. See D. Michael Risinger, Mark P. Denbeaux and Michael J. Saks, *Exorcism of Ignorance as a Proxy for Rational Knowledge: The Lessons of Handwriting Identification "Expertise,"* 137 *U. PA. L. REV.* 731, 747 (1989). See also generally D. Michael Risinger and Michael J. Saks, *Science and Nonscience in the Courts: Daubert Meets Handwriting Identification Expertise*, 82 *IOWA L. REV.* 21 (1996).
69. See *Historical Notes about the Cost of Hard Drive Storage Space* (visited December 15, 2000) <<http://www.altis.net/ns1625/winchest.html>> (adjusted to US dollars using an exchange rate of \$1 CDN = \$0.77 US).
70. *MICH. COMP. LAWS ANNOT.* § 565.8 (2000).
71. The states are Connecticut, Florida, Georgia, Louisiana, Michigan, Ohio, South Carolina and Vermont.
72. See, e.g., *Minn. Stat.* § 325K.23 (2000); *Ariz. Rev. Stat.* § 41-355(A)(5) (2000).
73. See generally Deborah M. Thaw, *The Notary Office and Its Impact in the 21<sup>st</sup> Century, A Presentation at the MACO/NACRC Annual Conference* (July 15, 2000) (available at <<http://www.priif.org/taskforce/NotOfBole.htm>>); Milton G. Valera, *In Notarization, There is No Substitute for Personal Appearance - Despite Technology, A Presentation to the Property Records Industry Joint Task Force* (July 13, 2000) (available at <<http://www.priif.org/taskforce/NotApp.htm>>).
74. See Valera, *Id.*
75. *Id.*
76. *MICH. COMP. LAWS ANNOT.* § 450.839(1) (2000).
77. *Id.*
78. See *MERS Shareholders* (visited January 13, 2001) <<http://www.mersinc.com/index1.htm>>.
79. See *MERS as Original Mortgagee (MOM)* (visited January 13, 2001) <<http://www.mersinc.com/mom.htm>>.
80. See *Sample Assignment to MERS* (visited January 13, 2001) <<http://www.mersinc.com/manuals.htm#7>>.
81. See *MERS Recommended Foreclosure Procedures for Michigan* (visited January 13, 2001) <<http://www.mersinc.com/ml.htm>>.
82. See *Why MERS?* (visited January 13, 2001) <<http://www.mersinc.com/why.htm>>.
83. See *iLumin Home Page* (visited January 13, 2001) <<http://www.ilumin.com>>.
84. See *An Introduction to the Automated Enforceable Online Transactions Market and Digital Handshake*

- Server at 12 (available at <[http://www.ilumin.com/technology/whitepapers/AEOLT\\_whitepaper.pdf](http://www.ilumin.com/technology/whitepapers/AEOLT_whitepaper.pdf)>).
85. See E-Sign, Title II, § 202.
86. See *An Introduction to the Automated Enforceable Online Transactions Market*, *supra*, note 84, at 12.
87. *Id.*
88. See John Schwartz, *E-Signatures Become Valid*, *The New York Times on the Web* (Oct. 2, 2000) <[http://www.eoriginal.com/News/articles/article\\_ny100200.html](http://www.eoriginal.com/News/articles/article_ny100200.html)>.
89. *Anchordesk Quick Poll Results* (visited January 11, 2001) <<http://cai.ednet.com/edpoll/question.html?pollid=18501&action=a>>.
90. *Id.*
91. Any such poll requires that one balance, on the one hand, the increased candor received by assuring anonymity against, on the other hand, the academic, political and probative value of knowing where various general counsel, registers of deeds and private practitioners stand on these issues. Having conceded the unscientific and subjective nature of the poll, it should be but a small step to understanding the need for candor and the consequent anonymity of all who commented for this article.
92. See generally Property Records Industry Joint Task Force (visited January 13, 2001) <[www.priif.org/taskforce](http://www.priif.org/taskforce)>.
93. See generally Electronic Financial Services Council (visited January 13, 2001) <<http://www.efscouncil.com>>.
94. *MICH. COMP. LAWS ANNOT.* §§ 565.201 to 565.203 (2000).
95. Several of these items are discussed in Dale A. Whitman, *Digital Recording of Real Estate Conveyances*, 32 *J. MARSHALL L. REV.* 227 (1999).
96. Property Records Industry Joint Task Force, *Standards Committee, Real Estate Document Formatting: A Review and Recommendations* at 26-28 (March 12, 1999) (available at <<http://www.priif.org/taskforce/DocFmtFinal.doc>>).