

National eNote Registry Requirements Document

Version 1.0

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1. Introduction

- a. This paper defines the concepts of operation, key assumptions and terms, and high level business requirements for a National eNote Registry.

2. Concept Overview

- a. The National eNote Registry is a compliance vehicle to satisfy certain requirements imposed by the Uniform Electronic Transactions Act (UETA) and the federal Electronic Signatures in Global and National Commerce Act (E-SIGN) so that the owner of an eNote (the Controller) would have legal rights similar to those that a "Holder in Due Course" has with a paper negotiable promissory note. An eNote issued in compliance with Section 16 of UETA or Title II of E-SIGN is called a Transferable Record (TR). Specifically, Section 16 of UETA and Title II of E-SIGN require that the party in control of the Authoritative Copy (AC) of the TR at any given point in the life cycle of an eNote can be readily identified.
- b. The concept of a National eNote Registry (National Registry) has evolved out of the need to track and identify electronic promissory notes (eNotes) in an evolving industry infrastructure for electronic mortgages (eMortgages). This need assumes that:
 - i. Proprietary electronic custodial repositories (eCustodians or eVaults) will exist to store eNotes
 - ii. When an eNote is sold, the electronic file may be transferred from the seller's eVault to the buyer's (or it may remain in place, if the buyer and seller have a business relationship that allows for that).
 - iii. Any electronic copy of an eNote is identical to any other – since they are simply bit-for-bit copies of computer files, no one copy of an eNote can contain data that would identify it as the Authoritative Copy (the electronic equivalent of the paper copy with the wet ink signatures)
- c. Therefore, some external mechanism is required to resolve the question of which of the (potentially many) copies of an eNote is the Authoritative Copy, and thus identify ownership of the eNote.
- d. The assurance of this external mechanism will be required by secondary market investors for them to accept delivery of eNotes.
- e. Based on this need, the National Registry will allow eNotes to be registered and uniquely identified for tracking and verification. It will store information on the controller and location of the Authoritative Copy of the eNote.
- f. The National Registry will not store the actual eNote, but only identifying information about it.

3. Scope

This document defines high-level business requirements for the National Registry; it is not intended to define the necessary business infrastructure to operate the National Registry.

4. Explanation of Key Terms

A number of terms have become commonly used in the development of the National Registry requirements, assumptions, and process flows. The Glossary section of this document contains a complete listing of terms and definitions. This section attempts to explain a few of the key terms in plain language, and bridge the gap between today's (paper-based) mortgage world and the new electronic mortgage world.

- a. **Authoritative Copy:** The copy of an eNote or other electronic transferable record over which Control can be identified and asserted by the Controller (or owner) of the eNote. Roughly equivalent to an original paper note with wet ink signatures, where physical possession is the analog of "control."
- b. **Controller:** The electronic equivalent of the Owner of a paper Note – the entity that is in Control of the Authoritative Copy of the eNote.
- c. **eCustodian:** A legal fiduciary designated by a Controller to administer the Controllers' eNotes on its behalf in an eVault.
- d. **eVault:** A secure electronic repository for eNotes. May be operated by an eCustodian or by a lender or investor to store their own eNotes. Similar to a paper vault run by the Document Custodian industry today.
- e. **Transferable Record:** An **eNote** issued in accordance with the provisions of Section 16 of the **UETA** and Title II of **E-SIGN**

5. Key Assumptions

The National eNote Registry Task Force developed a number of key assumptions that help to frame and drive the business requirements. These assumptions attempt to provide a real-world view of the National Registry's operational and business environment.

- a. Electronic notes registered with the National Registry must contain language, which refers to the National Registry to identify their Controller.
This language provides the "closed loop" of relationships and responsibility, which ensure that the eNote, Controller, eVault, and National Registry all work together to satisfy the Safe Harbor provision of UETA Section 16.
- b. All parties interacting with the National Registry must have executed membership agreements with the National Registry.
- c. The authority of the National Registry would extend from specific investor requirements for its use.
- d. The National Registry is expected to evolve over time to continue to meet industry needs.
- e. The National Registry functionality is limited to electronic notes, and not paper notes.
The National Registry is intended to satisfy the requirements of UETA and E-SIGN for electronic notes only. Attempting to provide functionality for paper note tracking would greatly complicate the design and implementation of the National Registry.
- f. The National Registry will communicate with member organizations using industry-standard XML messages.
- g. The National Registry is intended to track and maintain information on eNotes that have been created using the industry-standard MISMO SMART Document format.
- h. The Business Partner agreement between the National Registry and participants will define the hash algorithm to be used on the eNote for registration purposes.
- i. The National Registry will not store eNotes or copies of eNotes.
The responsibility for ensuring the validity of an eNote and its hash value rests with the Controller and its eVault. This responsibility should be clearly delineated in the business agreements that National Registry participants must enter into in order to transact with the National Registry.
- j. A single neutral industry-wide eVault will not be a viable business solution.
Although it would solve many of the business, technical, and functional challenges that we face in this new industry paradigm, it is clear that individual vendors will provide eVaulting services to lenders just as Document Custodians provide similar services in the paper world today. It also seems likely that larger

lenders and secondary market investors will not allow their eNotes to be stored by a third-party utility such as a national eVault.

- k. Multiple proprietary eVaults will be created to satisfy the specific electronic storage requirements of eNotes for various investors.
This is the corollary to (j) above – some of these exist already.
- l. The National Registry is not involved in the transfer of funds (it is not a book entry system).
The National Registry would not be involved in the entry, forwarding, or tracking of good funds associated with the closing of the electronic mortgage or the transfer of the eNote.
- m. Endorsements of eNotes are not required; transfers of control in the National Registry are the legal equivalent of a paper endorsement.
The National Registry will track all transfers of control and other events in the life of the eNote in its audit logs.

6. Business Requirements

This section states the core, high-level requirements that the National Registry must fulfill to provide the legal rights described above, as defined by Section 16 of UETA and Title II of E-SIGN. The National Registry will:

- a. Perform initial registrations of eNotes:
 - i. Confirm valid sender
 - 1. Organization is member of National Registry
 - 2. User is valid
 - 3. Check that the organization that control is being asserted for is valid for that requester
 - 4. Authenticate organizations
 - ii. Confirm that the registration dataset is complete
 - 1. Controller
 - 2. Location
 - 3. Primary ID – Mortgage Identification Number (MIN)
 - 4. PKI hash value of eNote
 - 5. Other optional data (Servicer, etc)
 - iii. Confirm that the eNote is not already registered
 - 1. The MIN (Mortgage Identification Number) and the PKI hash value for the eNote will be the primary means of uniquely identifying eNotes in the National Registry
 - iv. Create a registration record with provided dataset and additional data such as date/time stamps
 - v. Send confirmation to sender of completed registration (or error message if needed)
- b. Perform transfers of control of eNotes:
 - i. Use a positive confirmation model – the transferee must confirm their acceptance within a specified time or the pending transfer is dropped
 - ii. Validate both transferor and transferee:
 - 1. Organizations are members of the National Registry
 - 2. Users are valid
 - 3. Check that the organization for which control is being asserted is valid for that requester (for example, if a Controller's delegate makes a request to the National Registry on behalf of that Controller)
 - 4. Authenticate organizations
 - iii. Compare the PKI hash value stored at the National Registry with the hash value submitted by the transferor as part of the transfer request (*the*

hash values must be identical, providing strong assurance, within the framework of the National Registry member agreements, that the eNote being transferred is an identical copy of the eNote that was originally registered by the Controller)

- c. Provide functionality for handling modifications to an eNote
- d. Provide functionality for liquidation of an eNote:
 - i. Change eNote to "Paid Off" status, for example (after two-step confirmation from controller)
 - ii. Allow reversal of "paid off" status in case of errors
- e. Store information concerning the location of an eNote
- f. Provide a Controller (or its delegate) with access to Registry data records on the Controller's own eNotes.
- g. Accept changes to the data record of an eNote record from its Controller, for example:
 - i. Location information (required field)
 - ii. Other optional fields that may be desired for National Registry operation
- h. Provide a mechanism for the Controller to delegate some level of authority to another organization, such as a Servicer, to initiate transactions or query the National Registry on their behalf
- i. Provide functionality to indicate that an eNote was de-registered and converted into a paper original.
- j. Maintain an audit trail of events and changes to each National Registry entry

7. Process Flows

The National Registry must support a number of detail process flows, such as the examples noted in the previous section (initial registration, transfer of control, liquidation). Figure 7-1 below shows an example of the high-level process flow that would occur when an eNote is created, initially registered, and subsequently transferred to different controllers. More detailed process flows will be developed as part of the detailed or technical requirements document.

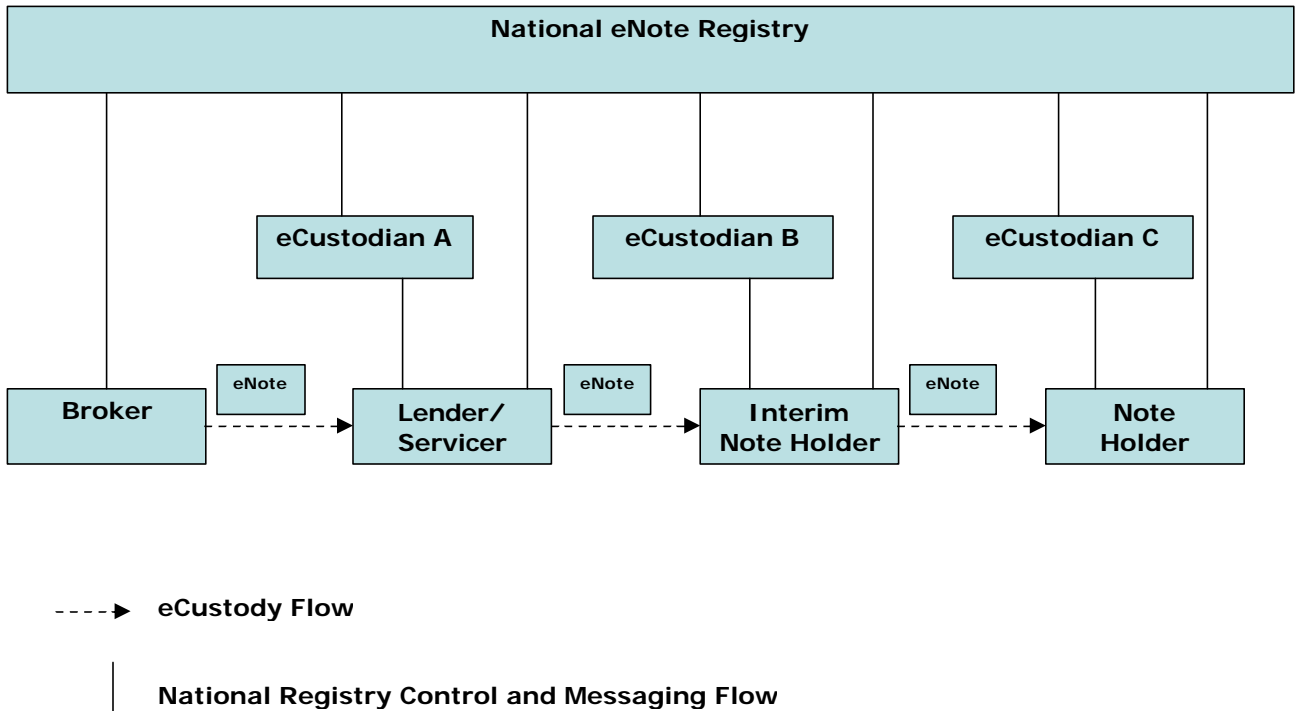


Figure 7-1: High-level eNote process flow

8. Infrastructure Requirements

The provider of the National Registry should ensure that the following infrastructure capabilities are

- a. Online Inquiry Availability
 - i. Monday through Sunday, 24 hours (with the exception of a scheduled maintenance window on Sunday)
- b. Real Time Inquiry and System-to-System Processing Availability
 - i. Monday through Saturday, 8:00 AM to 10:00 PM EST
- c. Transaction Processing Requirements
 - i. Registration: within one business day (24 hours) (*Note: this is a recommendation only, the National Registry cannot mandate this as a requirement*)
 - ii. Transfers: within three business days
 - iii. Note: Transactions may be effective-dated, but only within the three business day standard.
- d. File Formats Supported
 - i. The file formats supported by the National Registry will be industry standard (e.g., MISMO XML)
- e. Help Desk Availability
 - i. Monday through Friday, 8:00 AM to 8:00 PM EST with 30-minute emergency callback response during off hours
- f. Non-Processing Days
 - i. New Year's Day, Martin Luther King's Birthday, President's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day
- g. Processing Environment
 - i. Servers would be maintained on a high availability basis
- h. Disaster Recovery
 - i. Full recovery from the last daily backup within 24 hours of a declared event
- i. Ad Hoc Reporting Capability
 - i. Participants would have ad hoc reporting access to information on registered records in which they have an interest
- j. System Integration Support
 - i. Provide documentation, integration assistance, and test environment to certify technology provider system interface requirements and to recertify future technology provider and/or National Registry system modifications
- k. Safeguarding Customer Information
 - i. Would satisfy Interagency Guidelines Establishing Standards for Safeguarding Customer information
- l. Data Processing Environment
 - i. Would maintain ISO 9000 compliance for midrange computing and web hosting

9. Glossary of Terms

Authenticate: The process of identifying an individual or entity usually based on a user name and password, but can also require the use of a token. In the case of the **eNote**, authentication is accomplished by validating a unique loan level identifier combined with certain cross-referencing data (e.g. Note Amount, Borrower Name, Street Address, etc. Authentication in systems is distinct from authorization, which grants individuals or entities access to system objects based on their identity.

Authoritative Copy (AC): The unique, identifiable and mostly unalterable version of the **eNote** that (1) identifies the person asserting control as *the* person to which the **Transferable Record** was issued or most recently transferred, (2) ensures that “each copy of the authoritative copy and any copy of a copy is readily identifiable as a copy that is not the authoritative copy” and (3) any revision of the AC is readily identifiable as authorized or unauthorized

Authorized Industry Participant: An entity that has signed a member agreement and has been granted security access to the **National Registry**

API (Application Program Interface): A set of routines, protocols, and tools for building software applications

Beneficial Rights: Ownership rights to the future cash flows of the **eNote**; the transfer of control of the TR evidences transfer of beneficial rights

Certificate Authority (CA): A trusted third-party organization or company approved by the investor that issues **Digital Certificates** used to create digital signatures and public-private key pairs. The role of the CA in this process is to guarantee that the individual granted the unique certificate is, in fact, who he or she claims to be. Usually, this means that the CA has an arrangement with a financial institution, such as a mortgage company, which provides it with information to confirm an individual's claimed identity.

Confirm: To give approval to by a confirmation transaction. The key distinction with **Verify** is that the event is not finalized until the recipient initiates and the **National Registry** accepts the confirmation transaction to make the event final.

Control: With **eNotes**, control over the **Transferable Record** replaces the notion of possession and endorsement in the paper analog for purposes of establishing the “holder in due course” status.

Digital Certificate: An attachment to an electronic message (or signature), that for security purposes verifies that a user sending a message or applying a signature is who she/he claims to be and is used to provide the receiver with the means to encode a reply or subsequent acceptance of the signature

DTD (Document Type Definition): A DTD states what tags and attributes are used to describe content in an XML document, where each tag is allowed, and which tags can appear within other tags

eCustodian: A legal fiduciary designated by a Controller to administer the Controllers' eNotes on its behalf in an eVault.

E-SIGN: Electronic Signatures in Global and National Commerce Act

eNote: The electronic promissory note. For this eNote to be negotiable and transferable, it must be clearly labeled the **Authoritative Copy** of the electronic promissory note.

eNote Hash: The hash value (or simply *hash*) is a number generated from the text of the **eNote**. The hash is substantially smaller than the text itself, and is generated by a formula in such a way that it is extremely unlikely that some other **eNote** text will produce the same hash value.

eVault: A secure electronic repository for eNotes. May be operated by an eCustodian or by a lender or investor to store their own eNotes. Similar to a paper vault run by the Document Custodian industry today.

Interim Note Holder: The investor or institution that holds (i.e. controls) the **eNote** for a temporary time period pending its transfer to the final **Note Holder**. An example might be in a loan closing where the originator has made a forward sale to an investor (GSE, large bank, etc.) but involves a warehouse lender to fund the closing. A warehouse lender could be the Interim Note Holder until the investor purchases the loan and releases the funds.

MIN (Mortgage Identification Number): The industry standard, unique loan numbering system maintained by Mortgage Electronic Registration Systems, Inc. (MERS).

Note Holder: The investor or institution that is intended to be the permanent holder (i.e. controller) of the **eNote**

Originator/Seller: The organization that originates an **eNote** and sells it to the **Interim Note Holder** or **Note Holder**

Paid-Off: Payor has satisfied all of his or her contractual obligations under the **eNote**

PKI (Public/Private Key Infrastructure): A system of **Digital Certificates**, **Certificate Authorities**, and other registration authorities that verify and authenticate the validity of each party involved in an Internet transaction

Public Key Encryption: An encryption method requiring two unique software keys for decrypting data, one public and one private. Data is encrypted using the published public keys, and the unpublished private keys are used to decrypt the data.

Protocol: Rules governing transmitting and receiving of data

Registrar: An entity that submits an **eNote** to the **National Registry** to be registered

Servicer: The party with contractual responsibility to collect payments on behalf of the **Note Holder**

Servicing Rights: The contractual rights that can be sold in the secondary market to collect payments on behalf of the **Note Holder**

Transferor: The entity that initiates a transfer to another entity

Transferee: The entity that receives a transfer from another entity

Transferable Record (TR): An **eNote** issued in accordance with the provisions of Section 16 of the **UETA** and Title II of **E-SIGN**

Trusted Third Party: An entity other than the **Note Holder** or **Servicer** that is in the business of providing services intended to enhance (i) the trustworthiness of the process for signing electronic records using an electronic signature, or (ii) the integrity and reliability of the signed electronic records

UETA: Uniform Electronic Transactions Act

Verify: A notice from the **National Registry** that an event occurred. The key distinction with **Confirm** is that the completion of the event is not dependent on the generation or receipt of a verification transaction.

X12: A data standard for the transfer of data between different companies using networks sanctioned by the American National Standards Institute

XML (Extensible Markup Language): A simple, very flexible text format derived from SGML. It is essentially a set of rules or a convention for putting structured data in a text file. It is platform independent and therefore allows the computer to generate or read files easily. XML uses tags to delimit pieces of data, but leaves the interpretation of the data up to the application (hence the need for standardized DTDs in the mortgage industry to seamlessly exchange quality financial data).