E-Manifest

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ABSTRACT

This presentation provides an overview of the e-Manifest program and system. System planning activities, current status and anticipated future activities are discussed.

Regulatory Background

- The current paper-based hazardous waste manifest system
  – Set of forms, procedures designed to track hazardous waste shipments from "cradle-to-grave"
  – Records information on types, quantities, and routing of hazardous waste
  – 6-copy form must be completed, carried, signed, filed, and/or mailed to states
  – Manifest satisfies both EPA's and DOT's requirements for a shipping document

- Primary External Stakeholders
  – Hazardous Waste Industry Handlers (small and large generators, transporters, TSDFs, brokers)
  – Hazardous Waste Industry IT Staff
  – State RCRA/Hazardous Waste Program Staff
  – State IT Staff
  – Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA)
  – Railroad Carriers

- Manifest represents a shared regulatory responsibility between EPA and DOT
  – DOT requirement is a shipper certified shipping paper to accompany shipment (note - certification can be "signed" with a rubber stamp or typed name
  – EPA standard is significantly higher and driver of signature requirements (CROMERR for every signature)

Regulatory Background, cont.

- "Hazardous Waste Electronic Manifest Establishment Act" enacted October 2012; "One year" rule final February 2014

- EPA to develop (and own) a national hazardous waste electronic manifest system
  - Requires final manifests be sent to the new, centralized EPA system
  - All federal and state wastes subject to the manifest program
  - Includes collection of electronic and paper manifests
  - No requirement to submit manifests to EPA previously
  - *Use of electronic manifests optional for users*

- Hazardous electronic manifest system goals
  - Meets the needs of the user community including States that rely on data contained in manifests
  - Attracts sufficient user participation and service fee revenues to ensure the viability of the system
  - Decreases the administrative burden on the user community and hopes to eventually streamline the Biennial Reporting process
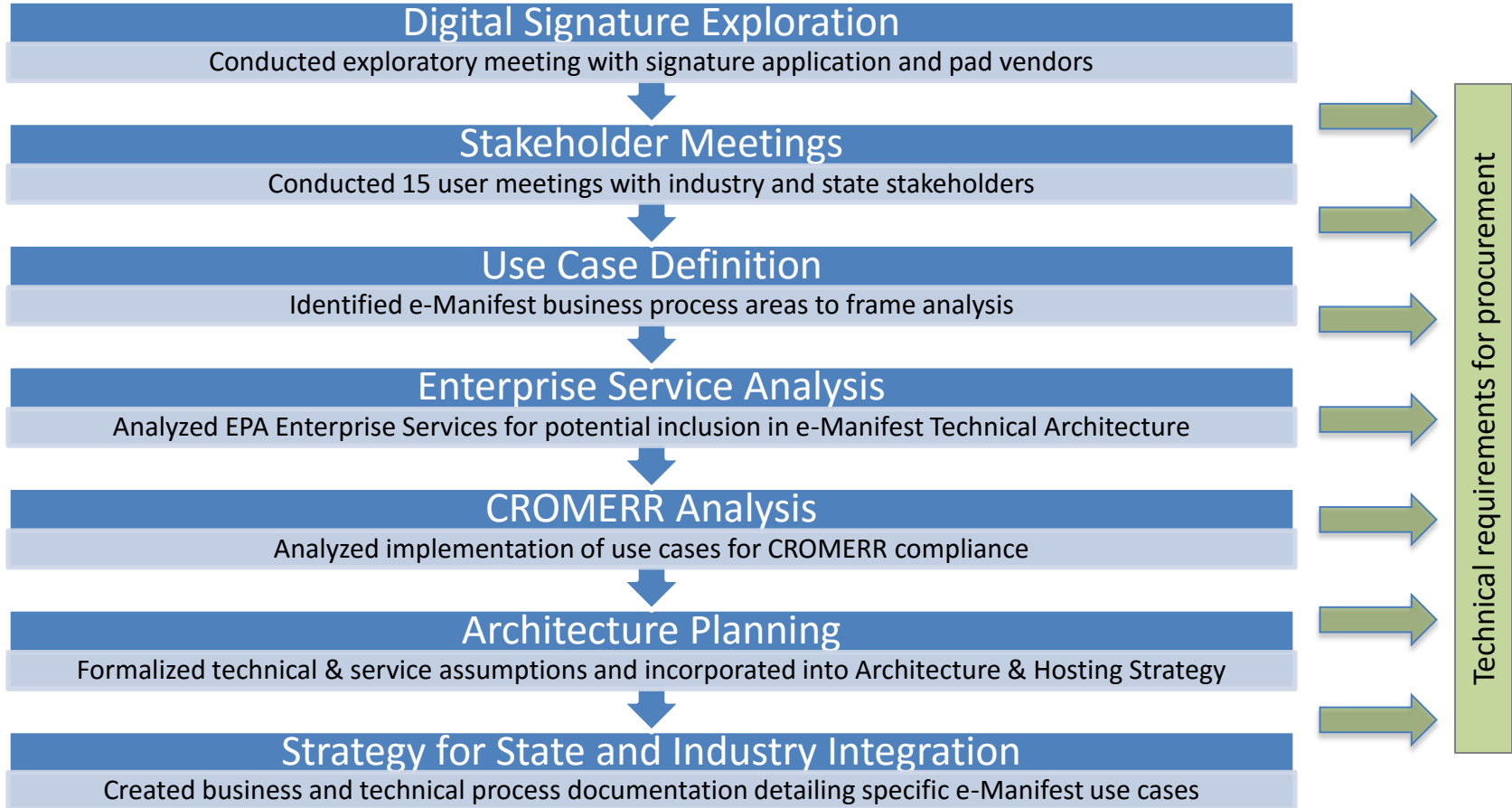
Concept of Operations

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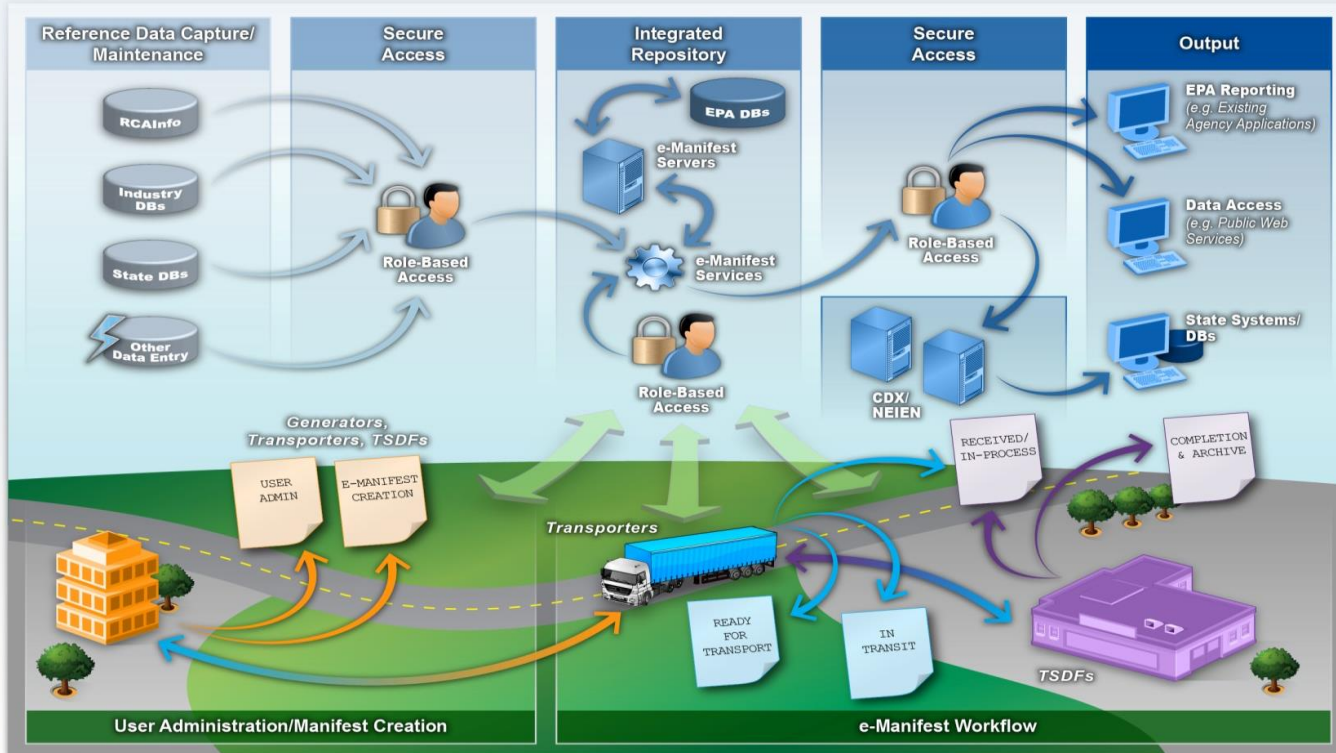
Assumptions for e-Manifest Technical Architecture

- Must not hinder the commercial transaction and chain of custody process

- Every signature must be CROMERR compliant
  - Implementation must be as practical and cost-effective as possible for user community

- Leverage EPA Shared Services, specifically CDX for CROMERR and non-CROMERR functions

- As per "One year" rule preamble, digitized and witnessed signature must be considered (in addition to standard CROMERR options)

Technical Planning Overview

Digital Signature Exploration

Conducted exploratory meeting with signature application and pad vendors

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Stakeholder Meetings

Conducted 15 user meetings with industry and state stakeholders

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Use Case Definition

Identified e-Manifest business process areas to frame analysis

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Enterprise Service Analysis

Analyzed EPA Enterprise Services for potential inclusion in e-Manifest Technical Architecture

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CROMERR Analysis

Analyzed implementation of use cases for CROMERR compliance

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Architecture Planning

Formalized technical & service assumptions and incorporated into Architecture & Hosting Strategy

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Strategy for State and Industry Integration

Created business and technical process documentation detailing specific e-Manifest use cases

Technical requirements for procurement

Conceptual Technical Architecture

| Architecture is service-oriented, allowing e-Manifest to easily leverage EPA shared services	4 ways to manage manifests in e-Manifest	CDX is used for registration, data exchange, signature, and COR management
• e-Manifest Web-Based System provides **a single point of entry for web, mobile and services-based submissions** • e-Manifest utilizes appropriate **CDX services on back-end** • **Simplifies integration** with a broad set of EPA, state and industry technologies and systems	• **Paper:** Paper processing center • **Web-Based System:** Industry user accessing the web-based system in an industry browser • **System to System:** Industry system accessing industry interface API • **Mobile App:** Industry mobile device runs e-Manifest app locally	• e-Manifest user profiles persisted in NAAS • NAAS is used for authentication and authorization • Inbound data flows through CDX • CDX is used for pin/password signature • COR managed and accessed using CDX services • Service impact of digitized under consideration

Conceptual Architecture
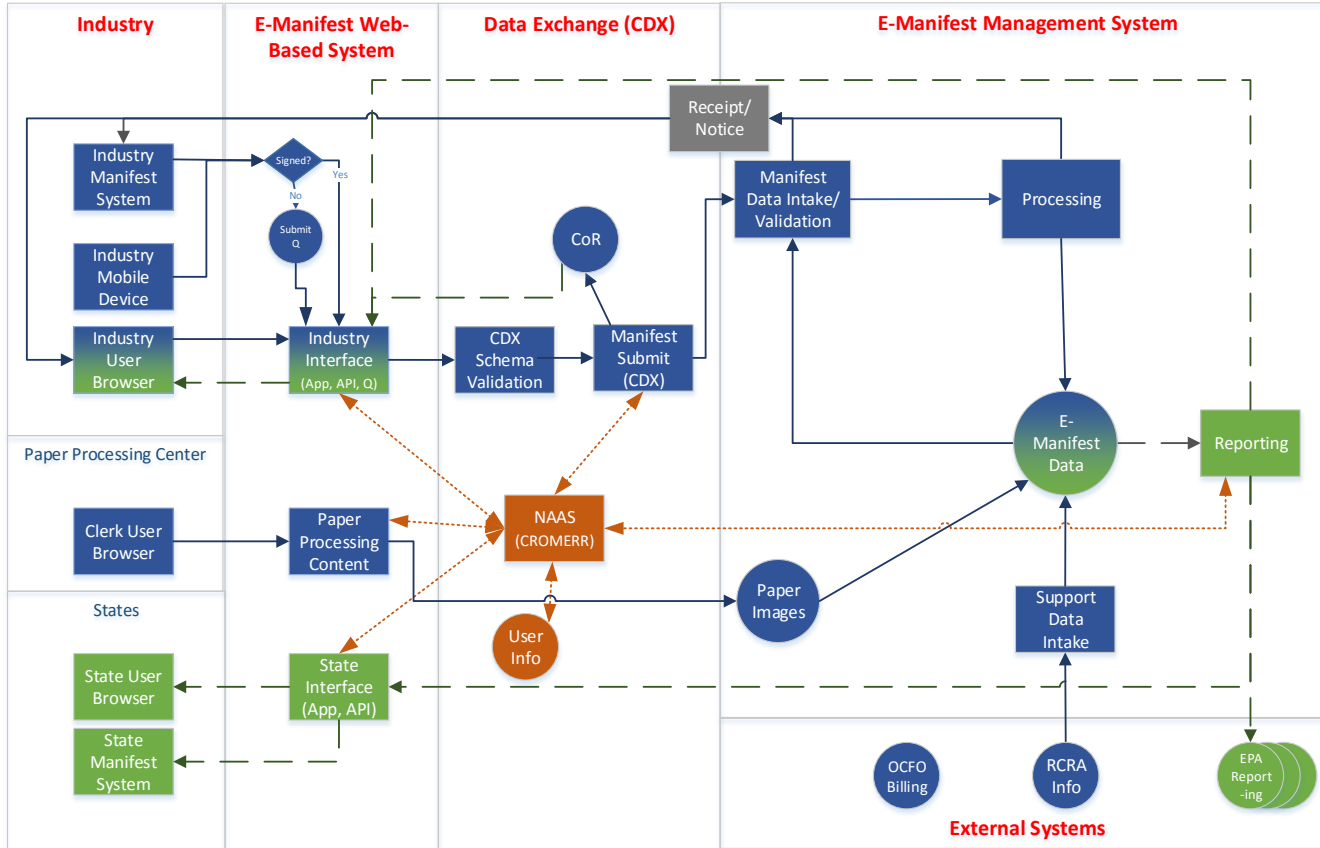
Current demo work

- EPA is currently completing an e-Manifest demo working with the GSA group 18F
  - https://pages.18f.gov/consulting/projects/epa/e-manifest/
- Demo showcases a set of e-Manifest APIs that allow a hazardous waste receiver to electronically sign a manifest, and have the COR electronically distributed to all handlers
- Additional development work leading up to complete acquisition may include:
  - Business rule development and integration
  - Digitized signature pad for electronic signature
  - QA processes including states and industry

Planned Demo Work (related to States)

- Demonstrating how states can pull data from e-Manifest
- Communication of manifests to signers of manifests and their sites
- Corrections
  - Methods for States and EPA to request TSDFs to make corrections to completed manifests.

System Development Strategy

- Using lean start-up product development strategies with agile, user-centered software design/development methodologies i.e.
    - Starting small and evolving in to a minimum viable product (MVP).
    - Address uncertainties from architecture planning work, and engage early with users and stakeholders.
    - Bring down the cost of current and future development by addressing risk upfront and insuring that the work being completed brings actual value to stakeholders and users.
    - Modular development practices.
    - Continuous improvement, using iterative processes, and regular engagement with users and stakeholders throughout the life of the program.
    - Code and progress are open source.
- User-centered design/development is underway.
    - Smale scale demonstration phase.
    - Actively engaged with GSA's 18F and industry/state users in the early phases of development, and creation of development platform and hosting environment.
    - Will expand to all/every user type over time (e.g. states with no systems, large and small generators etc. etc.)

Development Schedule

- July 2015 – September 30, 2015 – Development early demonstration of functionality.
- October 1, 2015 – February 28, 2016 – Minimal Viable Product (MVP) Development.
- March 1, 2016 – September 30, 2016 – Early Full Scale Development.
- October 1, 2016 – January 2018 – Rolling Iterative Releases (Alpha & Beta Phases).
- January 2018 – April 2018 – Mature Product Development & Continuous Improvement.
- Goal to have system fully online no later than Spring, 2018.
- User fee regulatory development process completed (i.e. final rule) no later than 90 days prior to system online-deployment date.