



E-ENTERPRISE  
for the environment

*Modernizing the business of environmental protection*

# Status of Facility Integration

E-Enterprise Facility Team

September 6, 2017 Webinar

# Opening Poll #1 for attendees

## What organization are you associated with?

*(percentage from the 81 webinar participants)*

- State – **53%**
- Federal – **22%**
- Other – **17%**
- Tribal – **4%**
- NGO – **4%**

# Opening Poll #2 for attendees

## What environmental media do you specialize in?

*(percentage from the 81 webinar participants)*

- Air – **48%**
- Multi-media – **36%**
- Water – **9%**
- Land – **7%**
- Pesticides/Chemicals – **0%**

# Facility Team Co-Chairs

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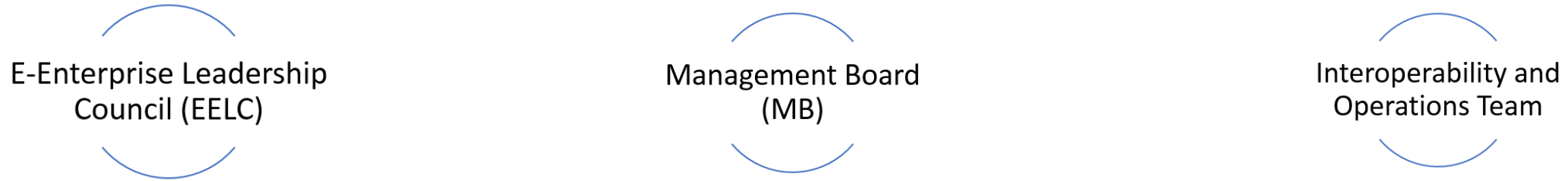
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# Webinar Objectives

- Provide update on work of E-Enterprise Facility Team
- Delve into specifics on facility API pilot with Rhode Island
- Solicit input from stakeholders on draft deliverables
- Review next steps to complete Phase II

# Facility Team: Component of E-Enterprise



# Common Vision for E-Enterprise Facility Integration

- Integration and correction of data in as near to real-time as possible
- Common facility profile model that allows for varying levels of granularity
- Shared business rules and mapping to common-enough terminology
- APIs flexible enough to work with EPA, state and other systems
- Shared good practices and tools

# Solving a Problem

- Integrated, reconciled, facility information is a key to solving the problem of:
  - Reducing regulatory burden
  - Increasing transparency
  - Ensuring best data available to make decisions
  - Improving data quality

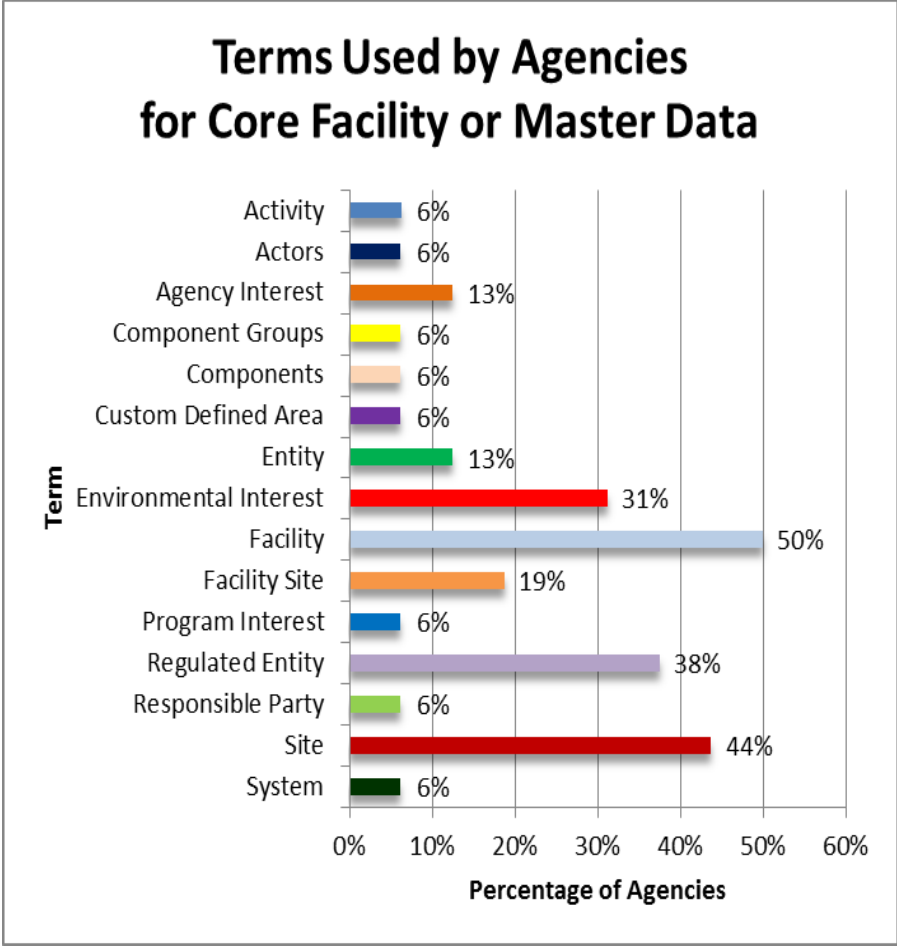
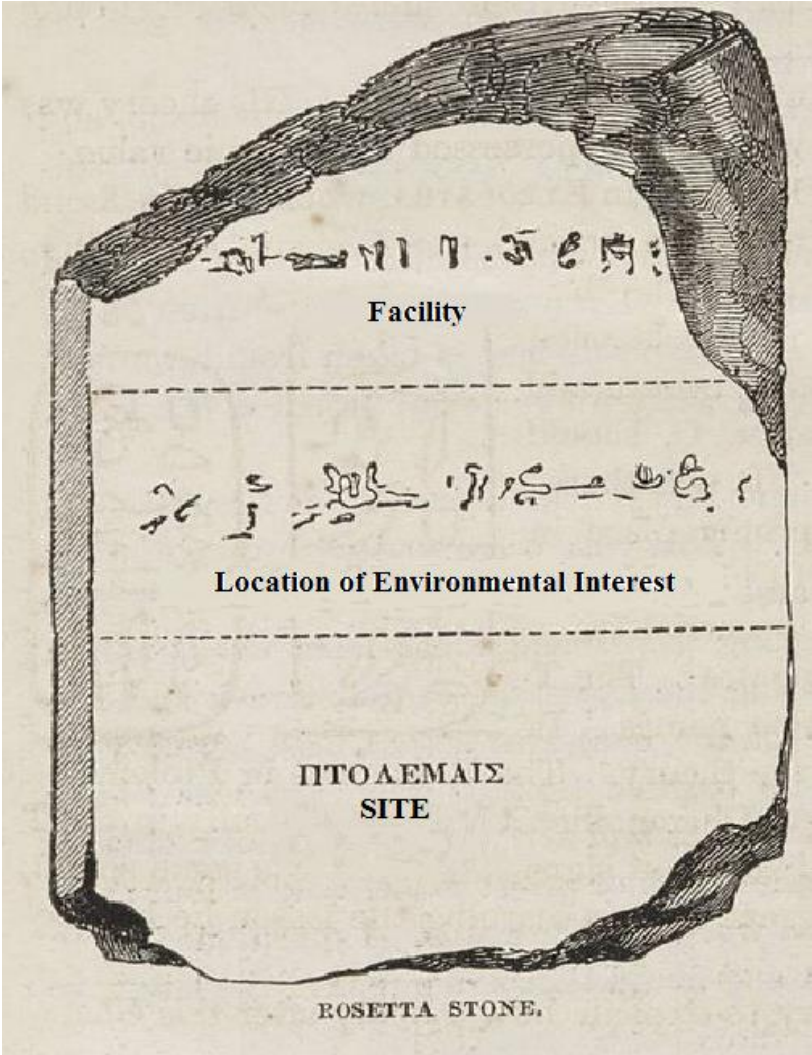


# The Rosetta Stone



- Inscribed with three versions of a 196 BC decree; rediscovered in 1799
- Top text in Ancient Egyptian hieroglyphic script
- Middle text in Ancient Egyptian Demotic script
- Bottom text in Ancient Greek
- *The key to deciphering previously untranslated hieroglyphic language*

# Developing a common understanding of facility information



From Phase 1 Discovery and Analysis

# Facility Integration Complexity

My facility is not your facility.

My 'facility' is not your 'facility.'

My 'facility' may/may not be your 'facility.'

My Facility<sub>EIS</sub> may/may not be your Facility<sub>TRI</sub>.

A:B and A:C does not mean B:C

# Phase I Accomplishments

- Cataloged existing partner systems
- Gathered lessons learned
- Conducted detailed discovery sessions with 3 states
- Compared 3 state business rules with existing EPA FRS services
- Produced “Discovery and Analysis” document

# Phase II Primary Outcomes To-Date

- Expanded documentation of detailed requirements
- Initiated development of shared services (APIs)
- Developed framework for executing repeatable analysis of state/tribal requirements
- Continued progress toward next phase

# Facility Work Streams

- User Stories
- Business Rules
- Facility Profile Model/API
- ~~• Combined Air Emissions Inventory (CAER) pilot with South Carolina~~
- EPA adoption of a state's Master Data Management (MDM) model pilot with Rhode Island
- ~~• A state, local or tribal (SLT) organization using EPA's MDM pilot~~
- Each work stream will be progressively refined based on findings of other work streams

# Milestones for Facility Phase II

- ✓ July 2016 Phase II kickoff
- ✓ September User Stories deliverable for comment
- ✓ November Business Rules work stream kickoff
- ✓ January 2017 Rhode Island pilot requirements work initiated
- ✓ May Initial findings presented at EN2017
- ✓ July Input into EN grant guidance for facility integration work
- ✓ August Rhode Island pilot and CAER gap analysis work paused
- ✓ ?? Resume pilot API development and complete other Phase II work as resources become available

# User Stories (*Comprehensive Use Cases*)

- Articulates full range of perspectives
- Stories associated with one or more key objectives:
  - Streamline data operations
  - Increase data accuracy
  - Support program analysis
  - Support data systems interoperability
  - Improve public understanding

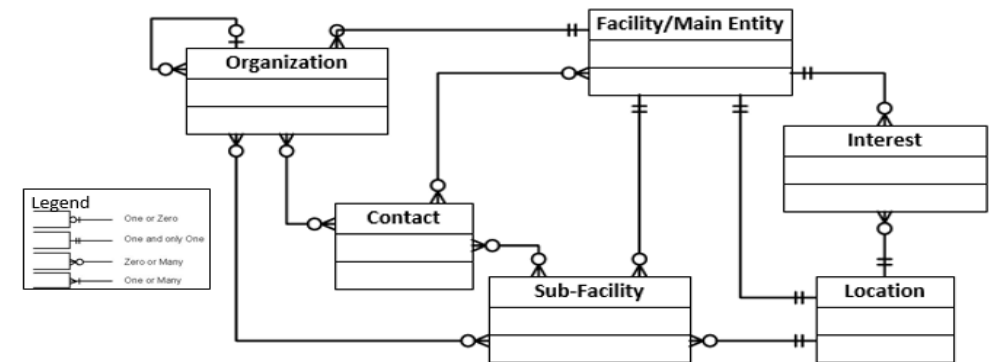


# Business Rules Process

- Ensure that rules address both system and data structure
  - Especially regarding data stewardship and hosting/maintenance of shared services
- Plan for governance for the short- and long-term
- Representatives from 6 EPA program areas and 6 states on team
  - Each provided background information on their approach to handling these high level questions
- Extensive discussions on each have developed into draft business rules

# Data Model API Work Stream

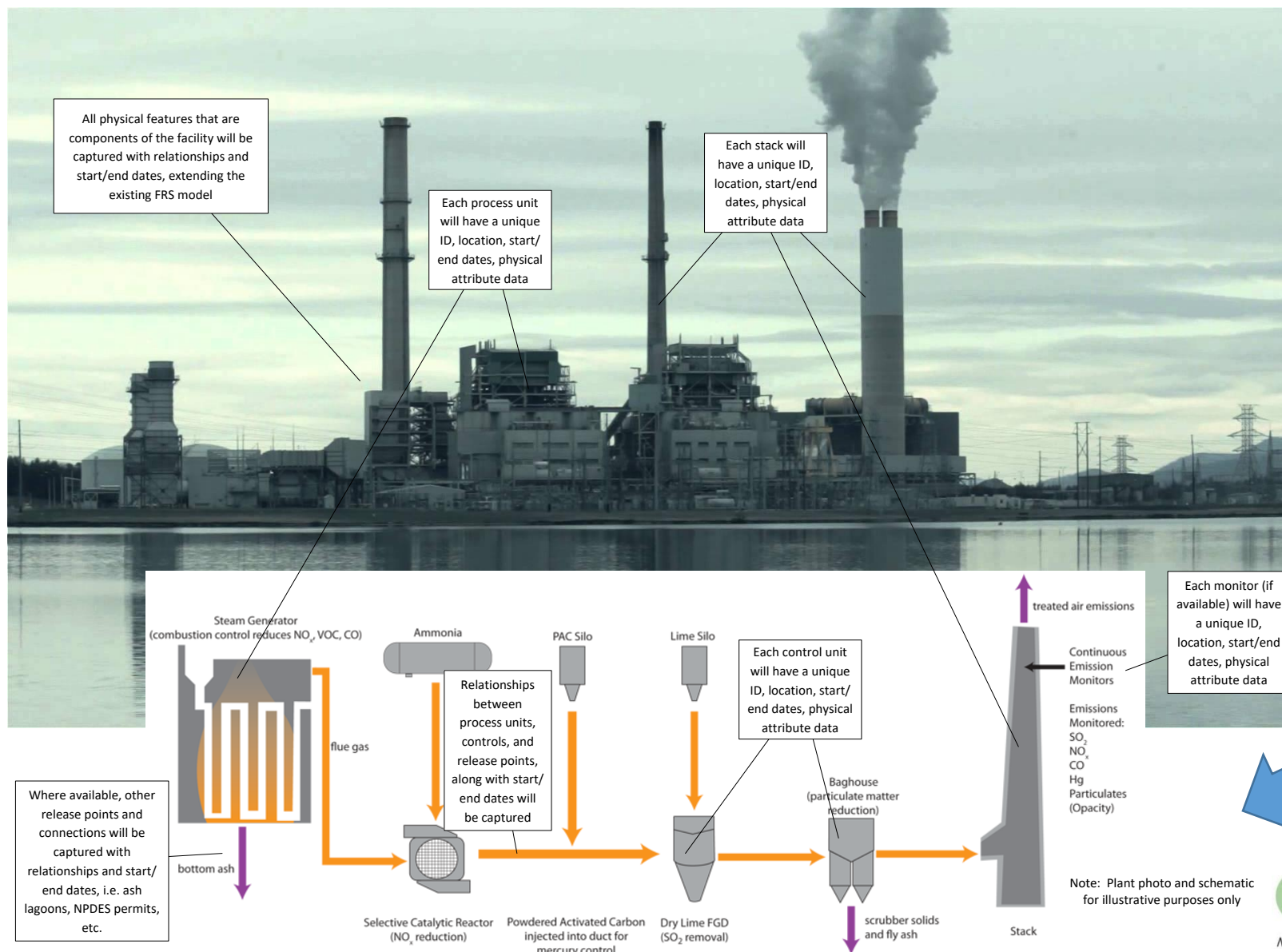
- Explored technical alternatives for conceptual facility data management
- Collaboratively discussed
  - List of facility services that may be necessary to implement
    - Query Services
    - Submittal Services
    - Lookup Services
  - Straw Model for Data Exchange
  - High-Level Technical Requirements



# Facility Registry Service's Expanded Data Model

- Drivers for FRS expanded data model
- Benefits of expanded data model
- Supports CAER requirements and other programs that require more granular facility data

# Expanded EPA FRS Data Model Reflects Programs' Reporting Requirements



## Old Model:

Contained only limited information:  
Facility name, type, location, owner, etc.

## Expanded Model:

Contains detailed facility attribute information, including sub-components and relationships between components



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# CAER Coordination

- Coordinated with CAER team to evaluate the approach needed for a successful integration between CAER and Facility
- Outlined the scope and goal for a Facility/CAER gap analysis
- Gap analysis will inform changes or additions to the FRS data model and the FRS API in order to support:
  - states' data needs and
  - needs of federal emissions reporting programs within the scope of CAER

# CAER Gap Analysis

- Identify gaps in FRS (expanded) data model and API for Air programs' reporting
  - Sub-facility components in scope of analysis
- Better understand a state's framework for managing Air data within the scope of CAER
- Develop repeatable process for more states to add to the gap analysis

# State MDM Pilot

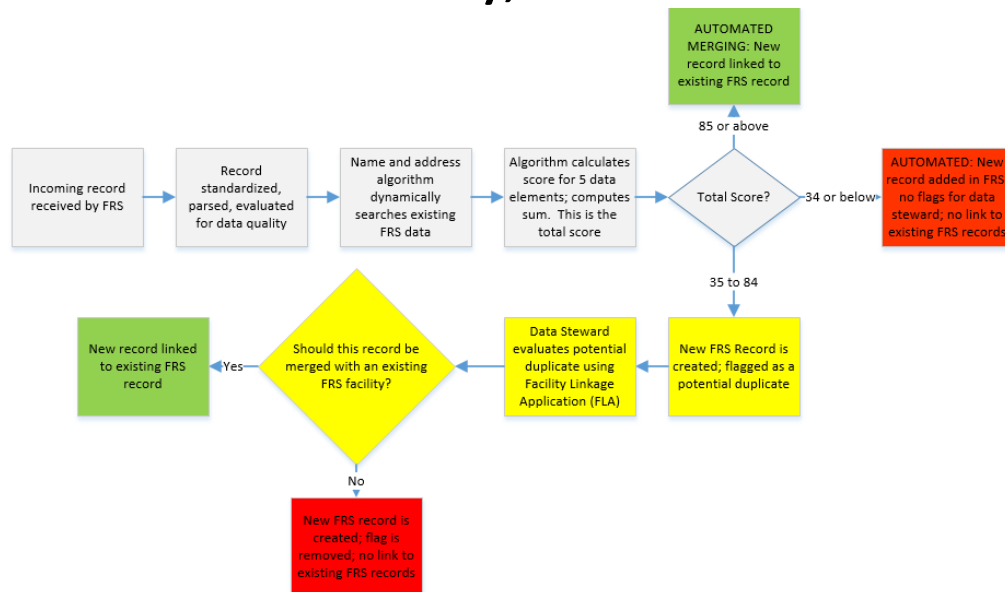
- Explore concept of a Master Data Management (MDM) state managing a shared facility record and serving as the source of facility data
- Share facility data between partners in real time
- Learn from deployment in test environment to evaluate downstream impacts of a state MDM record acting as the enterprise master record
- Document approach and lessons learned to develop shared facility services strategy for production deployment with Rhode Island and other future partners



# State MDM Pilot: Where We've Been - Discovery

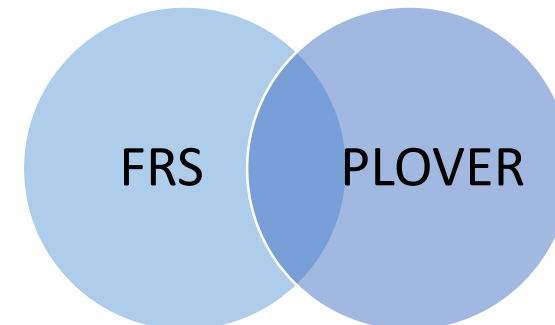
## As-Is discovery

- Detailed overview of FRS and PLOVER
- Functionality, business



## Data

- Updated RI Master Facility Data into FRS
- Evaluated metrics
- Identified different types of facilities and where they overlap





# State MDM Pilot: Where We've Been - Design

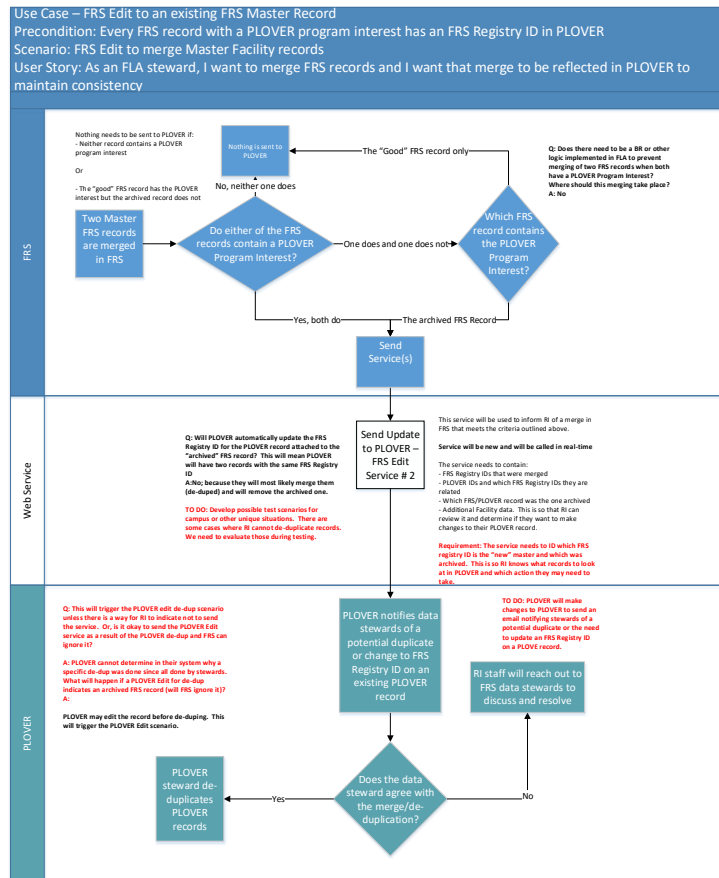
## Use cases/to-be discovery

- Governance – who can do what, and when with what permissions
- 4 main use cases with 7 scenarios

## Design

- Data fields needed for various services – determine if issues with non-nullable fields, data format, data length
- Service gap analysis
- Identified authentication mechanism
- Planned sprints
- Determine frequency and how to initiate in each system
- Scope – in vs. out for minimal viable product (MVP)

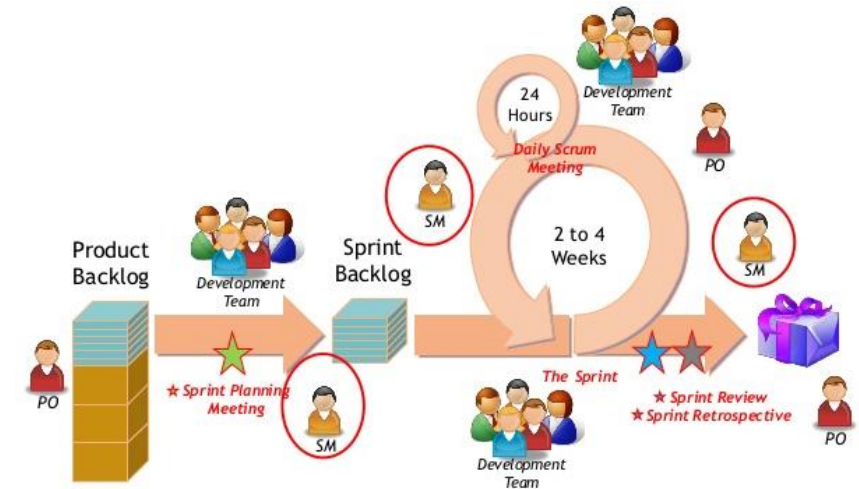
# State MDM Pilot: Where We've Been – Use Cases



- Each use case has a user story, assumptions, and identifies:
  - Services needed
  - Changes needed to business logic or business process in RI's PLOVER and/or EPA's FRS
  - Questions that must be answered before design/build
  - Potential downstream impacts in to-be state
  - Governance issues

# State MDM Pilot: Where We've Been – Agile Sprints

- Created sprint backlog based on meeting minutes, shared documents and other resources
- Completed Sprints 1 and 2 with goal to complete all prep work so development can begin
- Cross-referencing meeting minutes, action items, JIRA tickets for traceability



# State MDM Pilot: Where We Are

- Discovery completed
- Design “good enough” to begin development
  - Design is iterative in an agile process and is never really “done”
- A few remaining questions can be answered ahead of development or once development starts



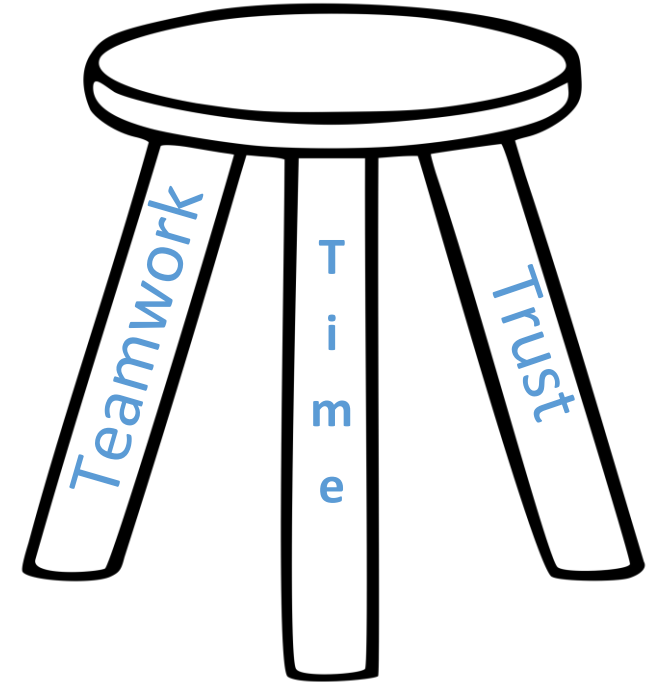
# State MDM Pilot: Where Are We Going?

- Develop services that will enable real-time sharing of master facility data
- Thoroughly test services for downstream impacts as well as general functionality
- Document results and identify where changes to services/business logic is needed
- Draft a “runway” document to serve as a blueprint for future partners to implement shared facility services



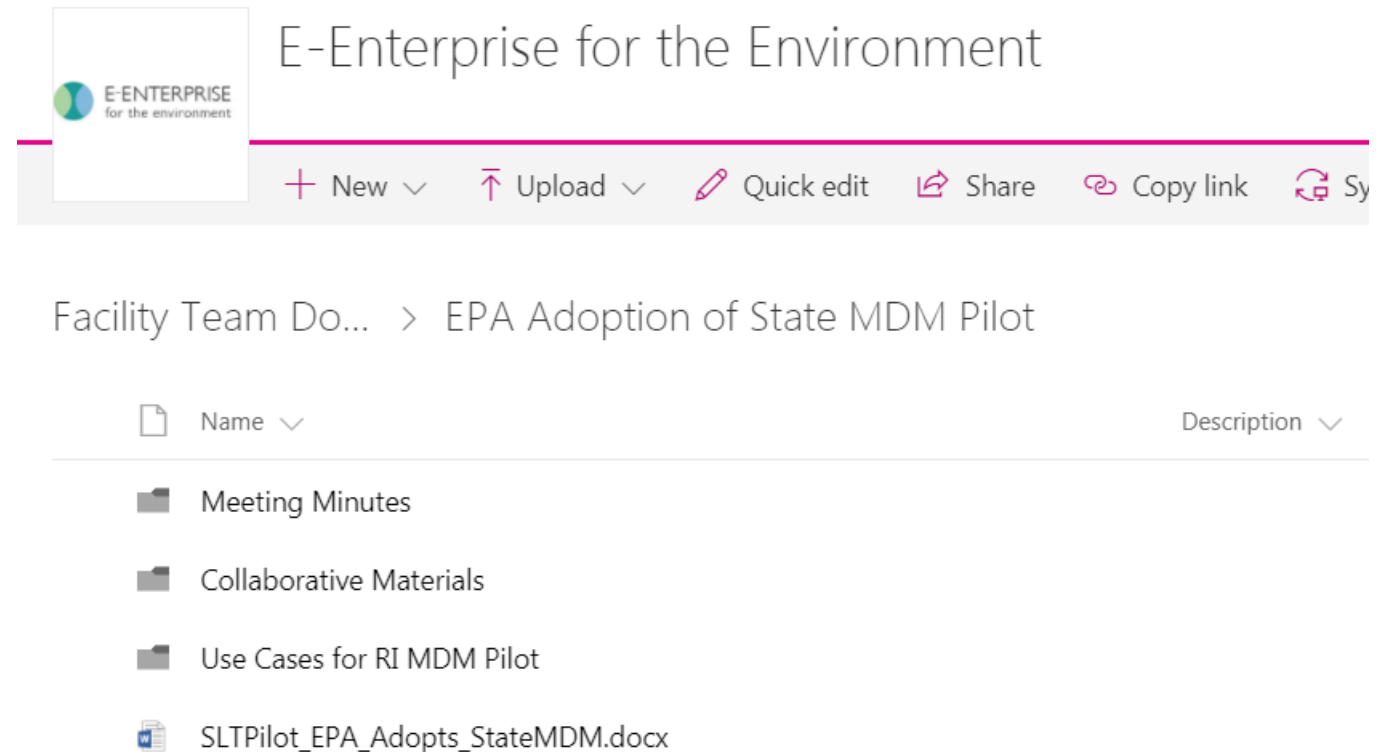
# State MDM Pilot: Pilot Lessons Learned (So Far)

- It's more complicated than it first appears
- Understanding each system's processes and logic is critical – and takes time
- Balance between the “what-ifs” and the “what is reasonable”
- Testing will reveal where changes are needed – and that is okay



# State MDM Pilot: Documentation

- Technical team maintains documentation for traceability through JIRA/Confluence tools
- Materials also maintained on SharePoint



# Key Points of Facility Phase II as of Today

- Spectrum of integration needed
- Leverage shared services
- IT and program Subject Matter Experts (SMEs) are required to collaborate throughout the entire process
- Data providers must be stakeholders in integration outcomes
- Flexibility required
- Resources are a challenge



# We're Headed in a Good Direction

- Identifying requirements and commonalities
- Identifying shared services to build
- Engaging broadly
- Moving forward

# We're listening

- Comment on draft deliverables:
  - SharePoint site for [Facility Team](#)
    - Login required; let us know if you need access
- Send feedback via email
  - Contact info on slide 6
- Join us for future webinars

# Questions?

*Thank You for Attending!*