Environmental Information exchange Network

EN2017

THE COMBINED AIR EMISSIONS REPORTING (CAER) PROJECT

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2017 Exchange Network National Meeting

Innovation and Partnership

May 16-18, 2017
Sheraton Philadelphia Society Hill Hotel
Philadelphia, Pennsylvania

http://www.exchangenetwork.net/en2017

ABSTRACT

The Combined Air Emission Reporting (CAER) project is one of five initial projects selected for scoping by the E-Enterprise Leadership Council. Under the CAER project, the EPA and State, Local and Tribal air agencies are working together to identify opportunities to increase efficiency, improve quality and reduce burden for industry in the reporting of air emissions and associated data. This presentation will provide an overview of the CAER project and discuss the process, experiences and challenges of working collaboratively across State, Local, Tribal and EPA programs on designing and implementing different aspects of the project, which range from program and policy analyses to IT software solutions.

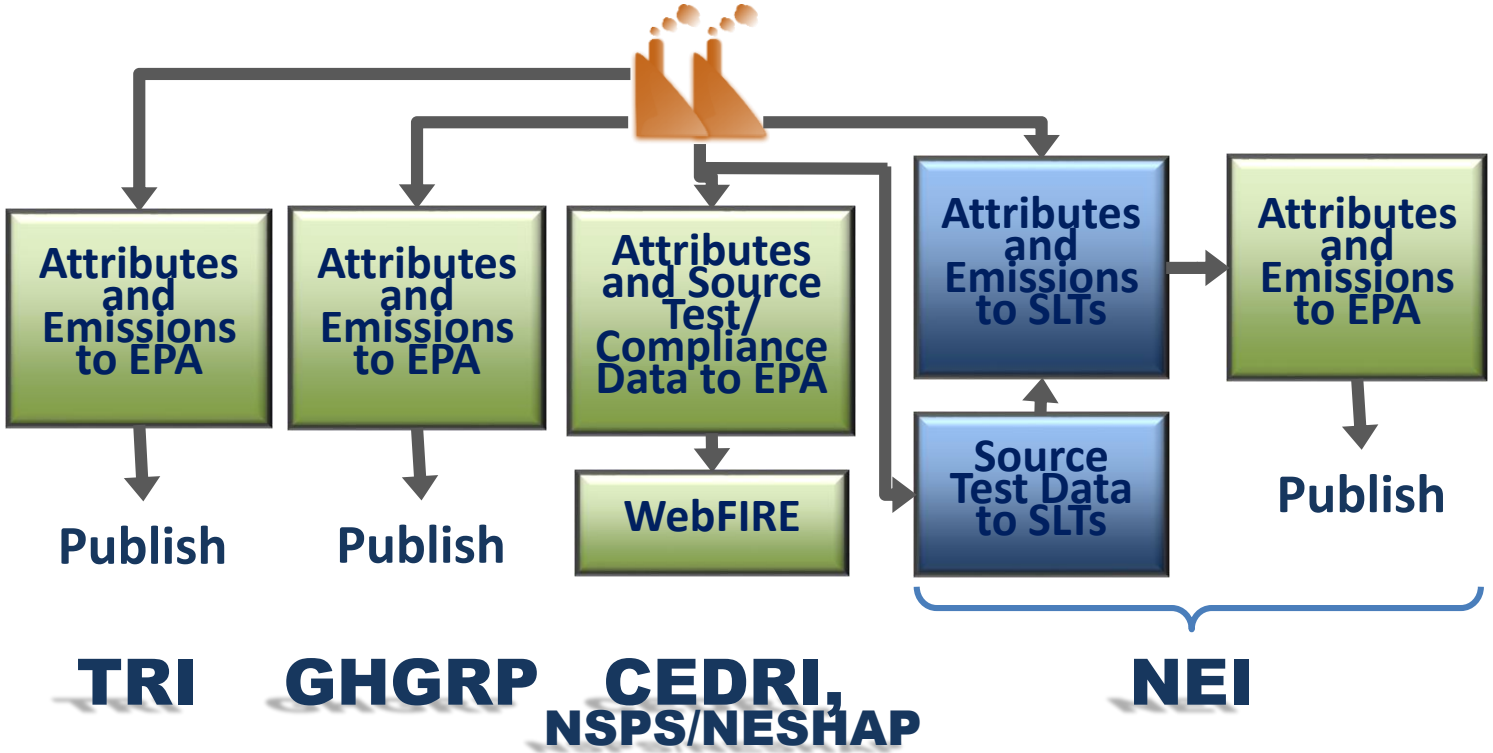
Overview

- CAER project purpose and goals
- E-Enterprise principles applied
- Key challenges and concerns
- Recent Project Results :
  - Five “Short Term Win” enabling projects completed in 2016
  - “Quick Start” event in fall 2016
  - Other on-going CAER-related projects
- Next Steps
  - CAER Implementation Plan
- Contacts

CAER Project Goals

- Basic purpose:
  - To consolidate emissions reporting activities through modern data sharing technologies and streamlined program collaboration
- Expected benefits would include:
  - More efficient and easier compliance for industry
  - More consistent, timely, and reliable data for regulators
  - Improved emissions data quality across programs
  - Improved accessibility and usability of data for all users

Air Emissions Reporting “As is” State



CAER Basics

- Focuses on point sources under four major air reporting programs:
  - Toxics Release Inventory (TRI)
  - Greenhouse Gas Reporting Program (GHGRP)
  - Compliance and Emissions Data Reporting Interface (CEDRI)
  - National Emissions Inventory (NEI)
- Need to address different pollutants, facility definitions, data resolution across programs
- Focus on *emissions* reporting (not facility attributes)
- Look at process improvements first, not regulations
- Use information technology to help, where appropriate

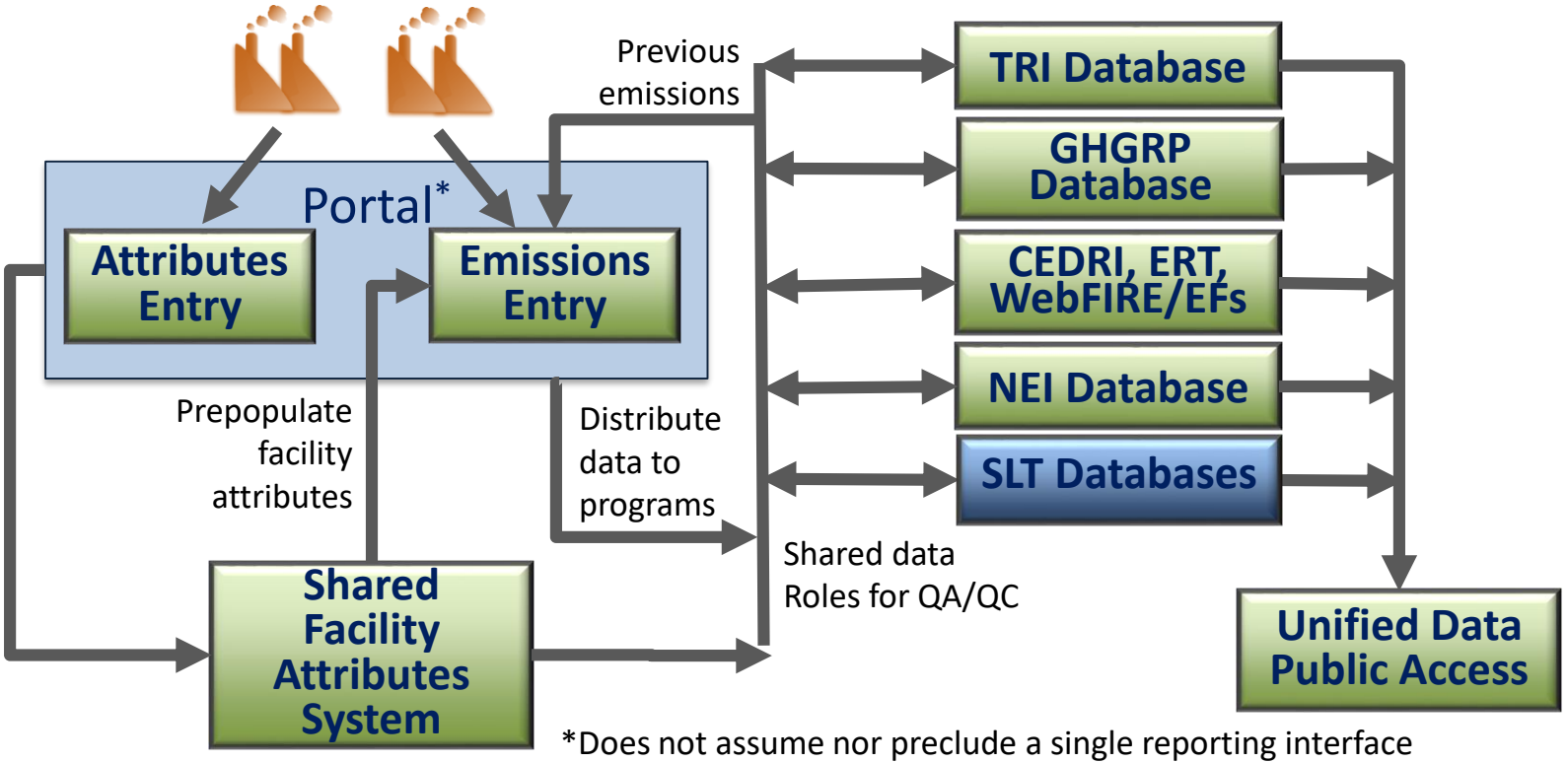
A New Way of Collaborating

- A new way of working together among EPA, SLTs and industry
  - Early and direct collaboration establishes trust and accessibility for affected community
    - Identification of issues/problems
    - Proposing and designing solutions
    - Implementing solutions
    - Creates an embedded value proposition
  - Shared solutions lead to a continually improving network of emissions reporting, improving overall quality of data across programs
  - Continued input received via:
    - Regular public webinars (typical audience >140 total; split around 50/50 for SLT/industry)
    - Industry information forums
    - Dedicated mail server
    - Bi-monthly coordination meetings with SLTs and EPA program staff
    - Weekly product design meetings that include SLT members

Example Integration of E-Enterprise Values in CAER Project

- Early engagement
  - Lean event held with SLT and industry participants
  - Return on investment analysis conducted (>$20 million/yr after full implementation)
  - 18F product strategy workshop
- Collaborative approach
  - Short-term project teams established around starting point issues/needs
  - Collaboration on longer term implementation plan
- Modern business and IT practices
  - Significant engagement between IT specialists and air program staff
  - Continuous feedback from ‘agile’ development processes results in prioritizing CAER-related activities and revisions to products

CAER Proposed Future State for Emissions Reporting



*Does not assume nor preclude a single reporting interface

Key Inefficiencies to be Eliminated or Reduced

- Difficulty matching facility and sub-facility data across databases due to inconsistent facility information
- Duplicative data entry and revisions by facilities of data elements that are included in several separate emissions programs
- Inconsistent emissions data across programs and associated work (e.g. reconciliation)
- Wait time caused by current SLT-EPA National Emission Inventory (NEI) process
- Duplicative post-submission quality assurance by EPA and SLTs

Key Challenges

- Knowledge base differentiation/diversity across implementing community (e.g., air policy staff v. IT staff)
- Looking beyond program silos
- Everyone has their “regular” jobs
- Potential for expanding scope
- SLT and industry concerns:
  - Trust by SLT and industry that EPA will listen and incorporate feedback
  - Accommodating diversity in state requirements and reporting systems
  - Accommodating diversity in industry data compilation/submittal processes
  - Concerns about requirements changes or new additions
  - Concerns about IT costs to implement

Common Questions

- Will EPA dictate how everything will change?
  - No, this is a joint EPA-SLT project and we are working together
- Have all of the decisions been made?
  - No, we are reaching out to SLTs and industry to get input on this project to make sure it is done right
- Is this a single big data system that everyone uses?
  - No, this vision is for a connected network of systems that allows for ownership by SLTs who want it and also supports SLTs that need more help
- How will we avoid the pitfalls of past large projects?
  - We are taking a stepwise “Agile” approach that looks for getting the most value out of the least amount of work first, getting lots of feedback as we go

Short Term Wins

The EPA-SLT CAER ‘Short Term Win” teams completed five enabling projects in 2016:

- CAER implementation plan
- WebFIRE search improvements and consolidated export of industry test data
- Data dictionary and harmonization of code tables
- Web-based service for Source Classification Codes (SCCs)
- Identify and eliminate root causes of EPA augmentation for the NEI

“Quick Start” Event

- Created a prototype during a 5-day challenge event in Sept. 2016
  - EPA members from each of the 4 CAER emissions programs and OEI
  - State members from GA, MS, SC, and WY plus EPA and state observers
- Focused on *emissions* sharing
  - Assumed sharing of facility attributes was in place via Facility Team
- Focused on NEI-SLT and NEI-TRI (two highest return on investments), with connections to GHGRP and CEDRI/WebFIRE
- Explored the idea of a “common emissions form”
- Explored the use of the Be Informed® software package for “model-driven design”
- Recorded prototyping results

Quick Start Takeaways on the Model-Driven Design Approach

- The approach successfully prototyped examples of CAER functionality
- It could make TRI more consistent with NEI
- Seems flexible enough to accommodate different state needs and can be configured to meet states' requirements
- Could allow state systems to push data to a "common form", thus states could participate in CAER with different mechanisms
- Requirements can be carefully modeled to ensure compliance for facilities and states and EPA programs
- Further evaluation needed to assess the applicability of the software for CAER project, particularly in terms of issues surrounding larger scale implementation
  - Use past performance information of the vendor to better assess the applicability for CAER
  - Full pilot testing at a candidate SLT needed to demonstrate full functionality and capabilities

Other CAER-related Projects

- Federal Registry System (FRS) data model revision
  - Can support shared facility attribute goal
  - Can support multi-program profiles
  - One possible solution for shared facility attributes portion of CAER proposed future state
- FRS-Risk and Technology (RTR) Review Project
  - Applying E-Enterprise principles and leveraging the new FRS to:
    - Streamline and standardize RTR collection of facility attributes
    - Share RTR-collected facility attribute data with other users
  - Giving us the possibility for demonstrating ‘real life’ applications of shared facility attribute system

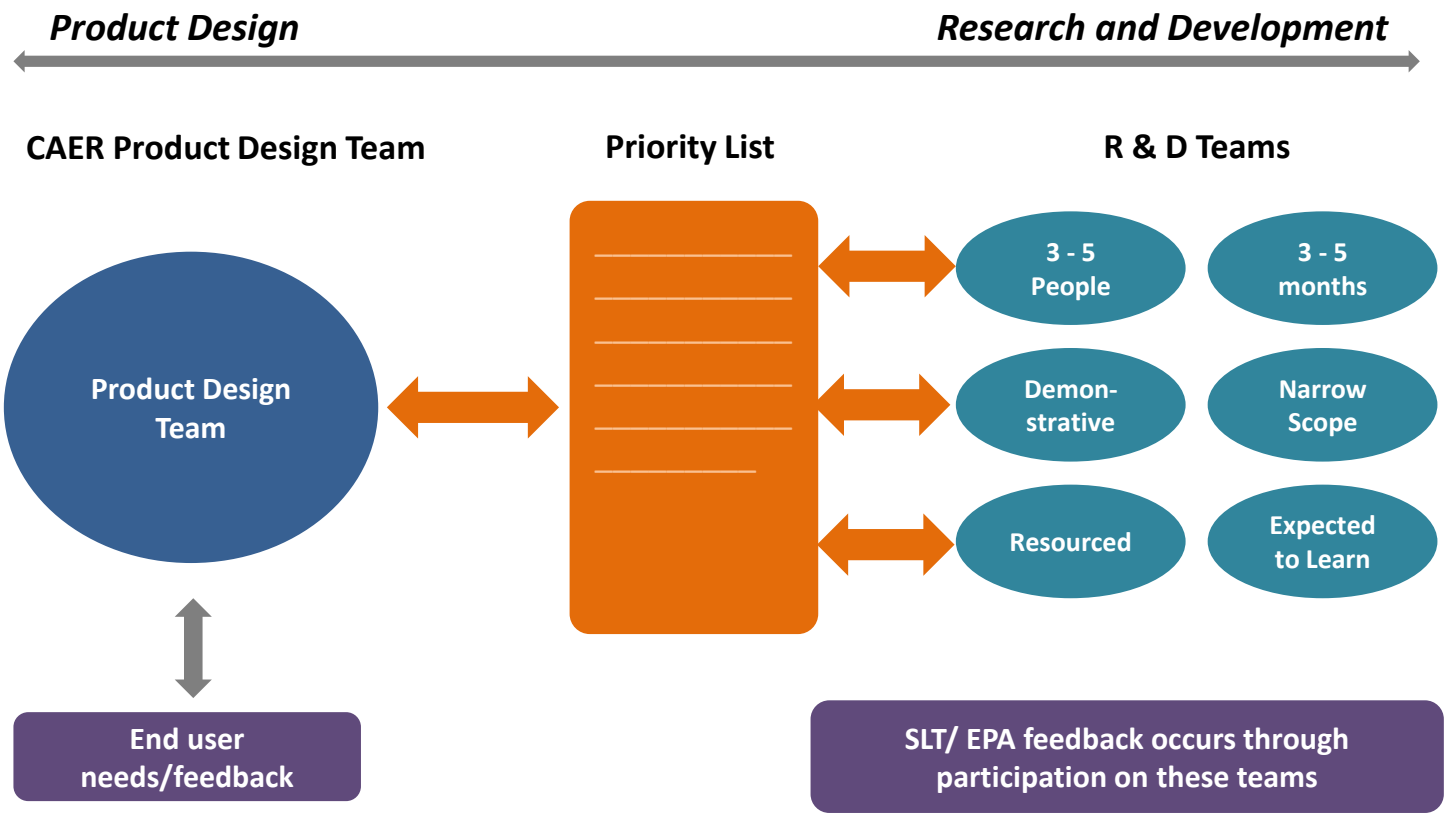
Refinements to Proposed Future State

- Does not assume nor preclude a single reporting interface
- Design implications
  - Heterogeneous operating environment – different access points for different agencies
  - Supports different capacity and interest to participate from SLTs and industry
- Requires more complicated governance, implementation, and maintenance
- Emphasis on a common facility solution
- Common reporting structure must account for unique program requirements

Next Steps

- CAER Implementation plan lays out multi-year process to implement CAER goal of shared emissions systems
- Initial phase of the Implementation Plan has started
  - Product Design Team formed late 2016
  - “First Round” R&D enabling projects defined and staffed for first half 2017 projects
  - Potential full scale pilot project scope being defined with goals of an FY 17 pilot
  - Software evaluations and procurement options being investigated
- Successive phases dependent on results of initial products, availability of resources for implementing IT approaches, overcoming any identified constraints
- Utilize and consider results from other CAER-related projects
  - E-Enterprise Facility Integrated Planning Team (IPT)
  - FRS/RTR project
  - FRS/Emission Inventory System (EIS) project

CAER Product Development Structure



Contact Points

- Participate in future CAER PDT or R & D teams
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- Join the CAER listserv; send email to: join-caer@lists.epa.gov
- Send comments and user stories to: CAER@epa.gov
  - Individual comments only (group comments cannot be used)