



Combining and Streamlining Data: How SLTs could get more out of CAER

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Overview

- Background information about IBEAM
- Connecting to CAER
 - Saving time and money—automating download of emissions data collected through Toxics Release Inventory (TRI), GreenHouse Gas Reporting Program (GHGRP) and Web Factor Information Retrieval (WebFIRE)/Compliance and Enforcement Data Reporting Interface (CEDRI)
 - Reducing Reporting Burden—downloading reports from CEDRI to eliminate duplicate submittals
 - Data Quality—comparisons of reported emissions to different programs could improve emissions data
- Summation

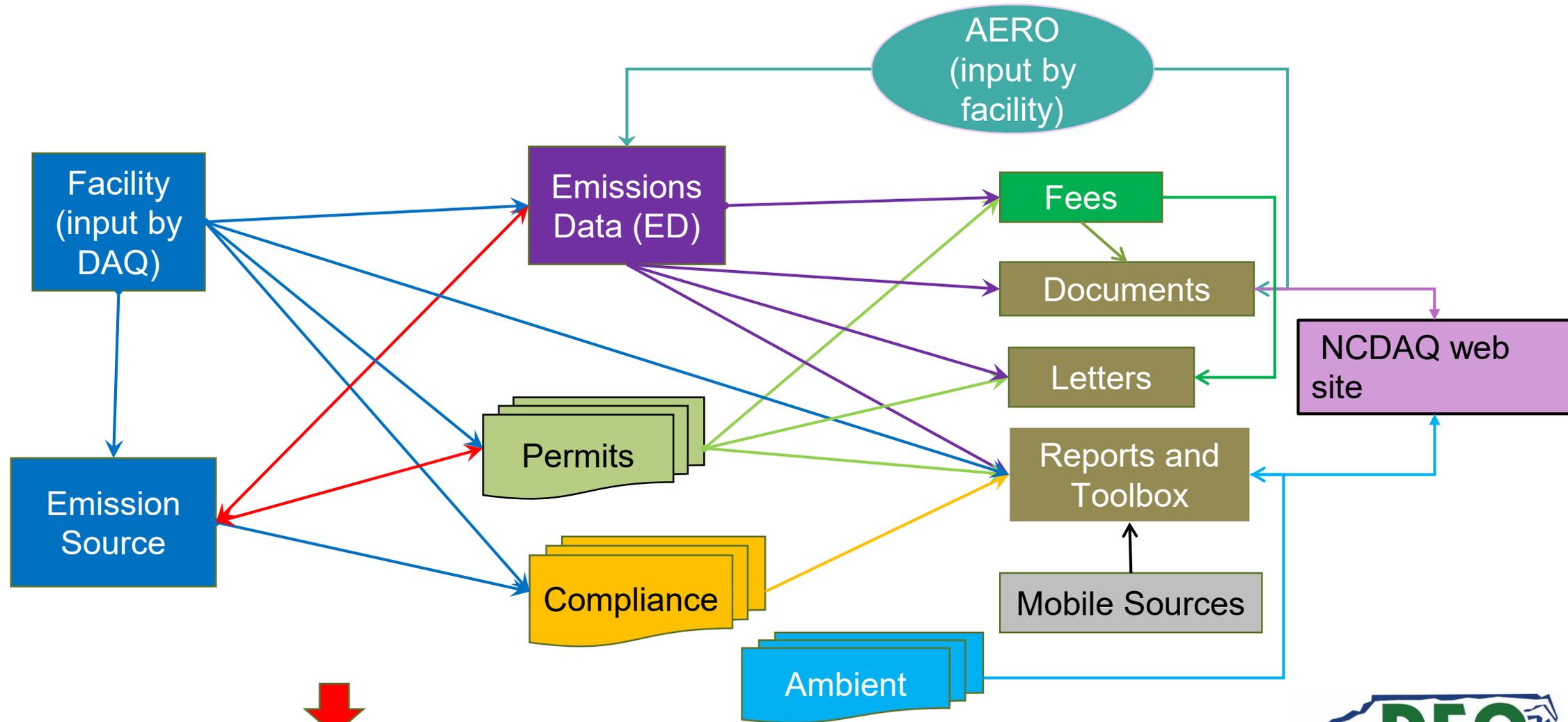


IBEAM

Internet-Based Enterprise Application Management

- CROMERR-compliant, Dynamic, Multi-faceted, Integrated Air Quality Database
- Began development in the late 1990's, originally called IMPAQ
- First modules developed were:
 - Facilities
 - Fees
 - Emission Sources
 - Emission Data (ED)
 - Air Emissions Reporting Online (AERO)
- Emissions data electronically collected using AERO started with CY2002
- CROMERR application approved January 2010.
- Module development/enhancement continues. There are currently over 20 modules included in IBEAM.

IBEAM Module Structure

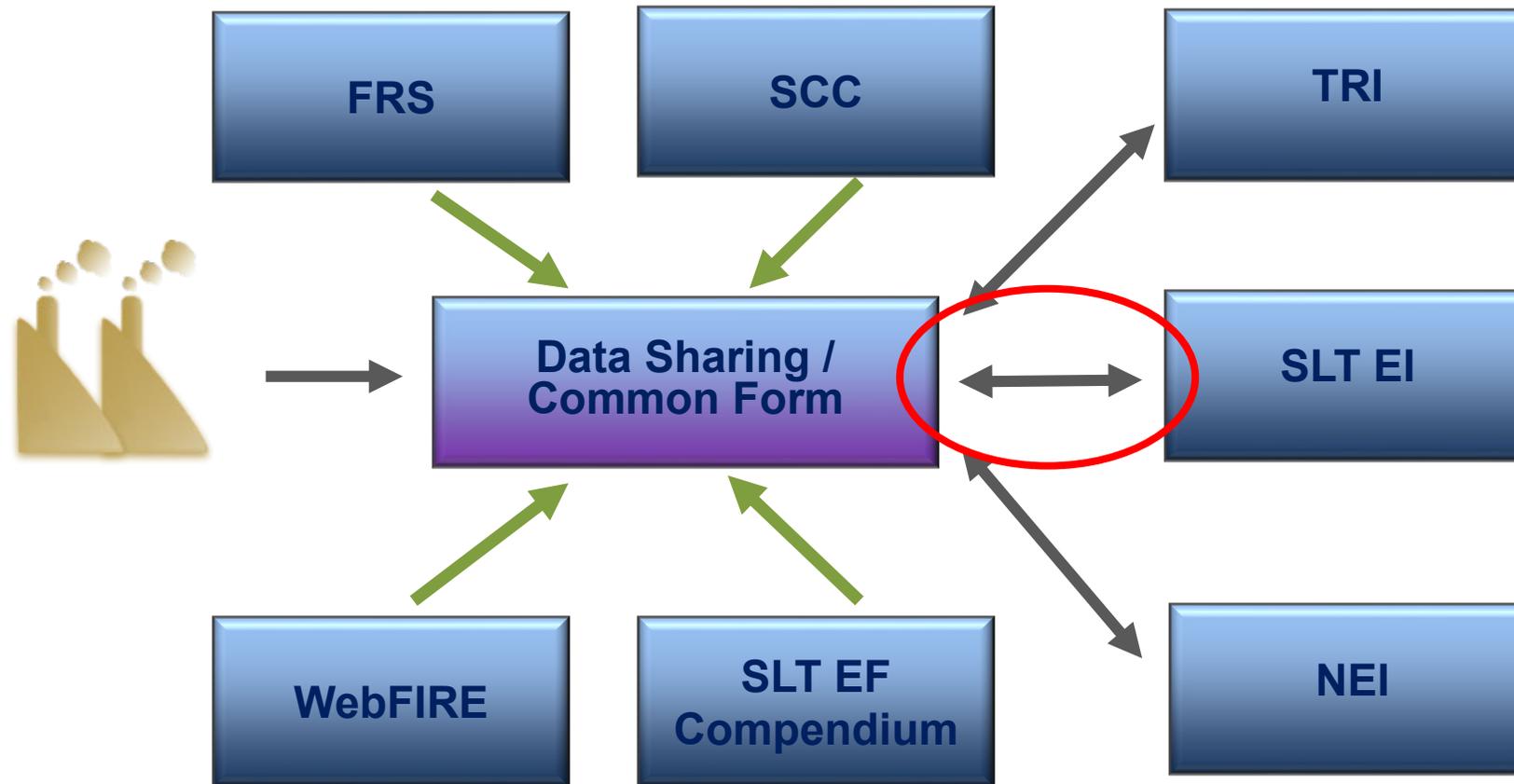


Dynamic data exchange between IBEAM and website.



Future Vision

Combined Air Emissions Reporting (CAER)



For NC, this interface would connect with a new IBEAM module. This module would be built to accept and save data from the CAER Common Form.

Saving Time and Money - Multipollutant Database

- For planning purposes each year, NC currently collects:
 - NCDAQ point source data from IBEAM
 - Point source data from NC's three local programs (current year EIS data),
 - GHG data from EPA's Greenhouse Gas Reporting Program (FLIGHT) and
 - Nonpoint, onroad, nonroad and event data from the most recent National Emission Inventory (NEI).
 - Pull NEI data forward in non-NEI years.
- These data are consolidated into one Access Database which can take one person 2-3 days to complete. Working with large files in Access can be tedious and differences in pollutant names between inventory sectors have to be resolved during this process.
- Once combined, at least 2 staff members review the data.
- Management uses the data for:
 - To show sector by pollutant (NO_x emissions are often evaluated by sector as an example)
 - for trends and emissions improvements
 - As a screening level tool for an environmental impact assessment
- Continue to update and improve the utility and visualization features

Saving Time and Money - Multipollutant Database

- When IBEAM can be connected to the CAER system, creating this database will be more efficient and consistent.
 - The data needed for this database (point source, nonpoint, event, onroad, nonroad and GHG) could be extracted automatically and stored in IBEAM. After the IT time to create the necessary module infrastructure and reports, staff time to collect, compile and manage this database would be virtually eliminated.
 - Reports could be created with specific search criteria within IBEAM so that when needed, management could request a data report from staff or generate one themselves. PowerBI could also be utilized to analyze and display the data.
 - Being able to automate the collection and compilation of these data would also eliminate errors during these procedures when staff changes.
 - The time necessary to quality assure the data could also be minimized by automating the QA procedures, creating QA reports and notifications.

Reducing Reporting Burden

- **WebFIRE/CEDRI**

- Accessing and incorporating AP-42 emission factors or stack test emission factors/rates in the IBEAM/AERO could streamline emissions calculations and improve accuracy. Facilities/DAQ staff currently have to enter emission factors manually in AERO/IBEAM to use the calculation feature.
 - Having a direct connection from IBEAM to WebFIRE eliminates incorrectly typing a value.
- Emission source ids used in EIS (agency id) and NC air permit could be incorporated into CEDRI stack tests for consistency and review efficiency.
- With the CEDRI connected to WebFIRE, there are compliance and stack test reports that could be accessed and utilized by SLTs much more efficiently (less paper) and could eliminate the need for duplicate reporting (sending a copy to CEDRI and SLT).

Data Quality

- Being able to access and compare emissions data reported to different programs could be an additional data quality check.
 - TRI Data
 - Even though the data collected by TRI is facility-level data, the source-level data in AERO/IBEAM could be aggregated and compared with the TRI data as a QA check.
 - GHG data
 - Accessing the GHG data reported to GHGRP could to evaluate the GHG emissions reported through AERO/IBEAM. Like TRI, the data may not be requested at the same level but could still be used to inform the data review.
 - Reporting GHG emissions is currently voluntary. Being able to potentially incorporate the GHG emissions only reported through e-GGRT (even if the emissions are reported at a different level) would make analyzing these data more thorough and give the state planners a more complete picture.
 - Other programs in CAER
 - Access to most current information in SCC web service, SLT emission factor compendium and WebFIRE/CEDRI would increase data quality and consistency.

Summation

- **Benefits to NCDAQ:**

- Time saved consolidating emissions data and consistent data quality in multipollutant database.
- Reports from multipollutant database could be created and accessed by all NC staff.
- Ability to download and store compliance reports electronically from CEDRI.
- Access to most current information in SCC web service, SLT emission factor compendium and WebFIRE/CEDRI.

- **Benefits to Facilities:**

- Facilities that submit emissions data for facilities in multiple states or submit data to TRI, CEDRI and GHGRP in addition to reporting to SLT would be able to log in to one place and submit emissions.
- Electronic signatures on an emission inventory. Envisioned capability in CAER system.

- **Benefits to All**

- AERO/IBEAM does not currently have an automated calculation feature with the ability search and incorporate emission factors or stack test data. Having access to WebFIRE/CEDRI would allow the AERO/IBEAM users to search and incorporate factors from this program.
- Less duplicate reporting.

Questions?

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NCDATAQ emission inventory web page:

<https://deq.nc.gov/about/divisions/air-quality/air-quality-data/emission-inventories>

