



OAQPS Data Systems Perspectives

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Topics

- OAQPS current/traditional role
- Retrospective look at 2008 Data Summit
- Current OAQPS thoughts on emerging role in a more connected community



Basics: OAQPS Place in the Air Quality World

- Ambient air data, emissions and models are used to:
 - Establish National Air Quality Standards (O₃, PM, Pb, NO₂, CO, SO₂)
 - And define area's compliance status
 - Support development of emission strategies to meet NAAQS through (1) National rules targeting energy generation and mobile sources and (2) supporting State Implementation Plans (SIPs)
 - Develop source based emission reduction targets for Hazardous Air Pollutants (HAPs)
 - Regional haze and secondary welfare standards (ecosystem impacts)



OAQPS traditional role

- Data receiver from States
 - NEI
 - AQS
- Systems not initially designed for access or interoperability
- AIRNOW/AIRNOW tech, AQS DataMart facilitate access



What was the 2008 data summit about? – OAQPS view

- GEOS/GEO and related DataFed attractive concepts but not utilized
- VIEWS provided data processing and visualization features that are used
- Internally, lack of integrated analysis systems
- Idea of blending the best of VIEWS and DataFed and Airnow tech
- Followed the data summit with
 - Community system enhancements leveraging NASA-ROSES-VIEWS
 - Enhance VIEWS with gaseous ozone data (hourly)
 - CMAS as public interface for CMAQ outputs and meta data
 - Assessment of EPA (and related) systems (Sweeney/Mintz..later)



Current OAPQS thoughts and activities

- Building off of the Data Summit,
(mid-2008-2009)
 - Focus on internal systems, to
 - Improve internal interoperability and efficiency
 - Reinforce community role in system of systems
- Internal Assessment
- OAPQS Data Strategy



What User Needs is OAQPS focused on?

- Reducing data handling and synthesis burden of analysts
- Integrating observations, model estimates to address 5D gaps
- Improving data extraction and visualization capabilities



Services desired

- Access, extraction (5D), visualization to CMAQ results
- Access, extraction, visualization to satellite NO₂, AOD, HCHO – CMAQ grid dimensions
- Ability to manipulate surface based observations (AQS, IMPROVE, CASTNET) with emissions, CMAQ results, satellite data, selected demographics data on compatible 5d framework



Infrastructure

- Meaning and desire?
 - Transparent access, extraction, manipulation and visualization of information borne of different attributes
- Impediments?
 - Lack of friendly interface and/or
 - Multiple interfaces required for each data set
 - Basic understanding and meta-data
 - Including QA/QC
 - Spatial incommensurabilities
 - e.g., Conversion across CMAQ 12, 36 km space with specific long/lat points, and demographic boundaries (State, county, MSA, census tract/block)