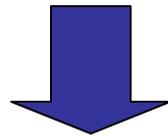


Terry J. Keating, Ph.D.
Office of Air & Radiation
U.S. Environmental Protection Agency

- To improve emissions inventories globally, we need to:
 1. Develop technical capacity and source information in poorly characterized regions
 2. Make better use of the information that we have.

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EDGAR-HTAP & NEISGEI

- **EDGARv4 is a gridded global emissions inventory developed using a uniform methodology and activity data from IEA and FAO (see <http://edgar.jrc.ec.europa.eu>)**
- **EDGAR-HTAP builds upon EDGARv4, replacing some of its estimates with those from nationally-reported or regionally-developed inventories to produce a global inventory that better reflects local knowledge.**
- **Initial focus is on traditional pollutants, Hg and POPs inventories will be added later.**
- **Years: 2000 to 2005**
- **Gridded emissions ($0.1^\circ \times 0.1^\circ$) are expected to be used in the multi-model experiments and assessment studies of the LRTAP Convention's Task Force on Hemispheric Transport of Air Pollution (See <http://www.htap.org>).**

Pollutant	EMEP (Europe)	UNFCCC (China)	GAINS (Rest of Asia)	REAS (Rest of Asia)	EDGARv4
CO	X	X	X	X	X
NO _x	X	X	X	X	X
SO ₂	X	X	X	X	X
NMVOC	X	X	X		X
NH ₃	X		X	X	X
CH ₄		X	X	X	X
PM _{2.5}	X		X		X
PM ₁₀	X		X		X
OC			X	X	X
BC			X	X	X



Decreasing Priority

EMEP
UNFCCC
Gapfilling by years
EDGARv4

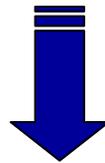
Description	IPCC	2000	2001	2002	2003	2004	2005
Public electricity and heat production	1A1a	38.5	34.2	32.4	33.1	29.7	26.6
Petroleum refining	1A1b						
Manufacture of solid fuels and other energy industries	1A1c	2.0	2.0	2.0	2.4	2.2	2.2
Manufacturing industries and construction	1A2	10.8	10.8	10.9	10.9	10.6	12.2
Civil aviation	1A3a	0.1	0.0	0.0	0.0	0.0	0.0
Road transportation	1A3b	100.0	101.1	102.1	103.0	105.1	126.7
Railways	1A3c	5.2	4.7	3.9	3.3	3.0	2.6
Navigation	1A3d	4.3	7.0	9.4	34.8	8.7	5.7
Other transportation	1A3e						
Other sectors (e.g. residential, commercial combustion)	1A4	18.7	20.0	20.3	21.5	23.1	23.4
Other	1A5						
Fugitive emissions from solid fuels	1B1						
Fugitive emissions from oil and natural gas	1B2	0.6	0.6	0.6	0.6	0.6	0.7
Mineral products	2A	0.4	0.4	0.4	0.4	0.4	0.4
Chemical industry	2B	4.2	4.6	3.0	3.1	4.2	4.9
Metal production	2C	0.1	0.1	0.1	0.1	0.1	0.1
Other production	2D	0.0	0.0	0.0	0.0	0.0	0.0
Other	2G	2.2	2.2	2.2	2.2	2.2	2.2
Solvent and other product use	3						
Enteric fermentation	4A						
Manure management	4B	2.3	2.2	2.3	2.3	2.3	2.0
Rice cultivation	4C						
Agricultural soils	4D	9.5	10.7	10.0	9.5	11.1	10.9
Prescribed burning of savannas	4E						
Field burning of agricultural residues	4F	1.3	1.3	1.3	1.3	1.3	1.3
Land use change and forestry	5	0.3	0.3	0.3	0.3	0.3	0.3
Landfills	6A						
Wastewater	6B						
Waste incineration	6C	0.2	0.2	0.2	0.2	0.2	0.2
Other waste management	6D						

NEISGEI Networked Environmental Information Systems for Global Emissions Inventories

Objectives: a web-based global air emissions inventory network to provide

- access to distributed emission inventory data at multi-spatial and temporal scales
- tools for data processing and analysis
- means for sharing data & tools
- an environment for collaboration among researchers, regulators, policy analysts and interested public

Approach: Develop, test, and implement components of an air quality cyberinfrastructure using the latest advances in information technology to make multi-scale air emissions data and tools easier to find, use and integrate.



An air emissions “cyberinfrastructure” that contributes to the Global Earth Observations System of Systems (GEOSS)

Recent Analyses

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Title	Date	Tool	Analyst
CMAQ_EPA_C...	3/11/08	Grid	SFalke
Testing CE...	3/7/08	Grid	Anonymous
RETRO_NEI ...	2/22/08	Emis	SFalke
EDGAR_NEI ...	2/22/08	Emis	SFalke
Emission C...	2/12/08	Emis	Anonymous
SCalSmoke...	2/11/08	Grid	SFalke
SCal_Smoke...	2/5/08	Grid	Anonymous

Events

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Title	Date	Location	Tags
18th International Emission Inventory Conference	4/14/2009	Baltimore, MD	EPA conference event

Other Analyses

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Title	Date	Tool	Analyst
Significant smoke plumes from the Yucatan and Central America	4/6/09	Smog Blog	Ray Hoff
Fires in Oklahoma leads to moderate air quality; ozone high over the Gulf	4/4/09	Smog Blog	Ray Hoff
Smoke over Gulf of Mexico persists; Blowing dust in the West; Ozone increasing in Texas, Oklahoma and	4/4/09	Smog Blog	Patricia Sawamura

What's New

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[CALPUFF_Oct23](#)
 1/12/09 11:04 AM
[CALPUFF_Oct22](#)
 1/12/09 11:02 AM
[CALPUFF_Oct21](#)
 1/12/09 10:58 AM
[18th International Emission Inventory Conference](#)
 12/13/08 12:00 AM
[The Vulcan Project](#)
 12/6/08 3:08 PM
 NASA and NSF funded CO2 emissions project at Purdue University

What's Active

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[30 days](#) [60 days](#) [Total](#)

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96 views
 Testing CENRAP Models in GridComp
[SCal_Smoke_Oct24_26](#)
94 views
 Southern California
[SCalSmoke_Oct26_24_Diff](#)
76 views
 Shows spatial difference between OMI absorbing aerosol from Southern California smoke on Oct 26 (wind blowing inland) and Oct 24 (wind blowing to Paci...
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 Difference (in tons) between an aggregated 2002 NEI Point, Area and Mobile emissions at the grid resolution of RETRO (for 2000). RETRO is higher every...
[EDGAR_NEI SO2 Comparison](#)
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 Total 2002 NEI (Point+Area+Mobile) aggregated to EDGAR and difference calculated with 2000 EDGAR. NEI is higher in some areas, particularly in Appalac...

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- [YahooNews: Carbon emissions reduction must begin immediately, activist says \(New Orleans Times-Picayune\)](#)
- [GoogleNews: Carbon emissions reduction must begin immediately, activist says - The Times-Picayune - NOLA.com](#)
- [GoogleNews: Op-Ed Contributor This Old Wasteful House - New York Times](#)
- [GoogleNews: Beijing keeps Olympic restrictions on cars after air quality improves - guardian.co.uk](#)
- [YahooNews: BA, Air France Propose Emissions Trading for Airlines \(Update1\) \(Bloomberg\)](#)
- [GoogleNews: BA, Air France Propose Emissions Trading for Airlines - Bloomberg](#)
- [YahooNews: BA, Air France Propose Global Emissions Trading for Airlines \(Bloomberg\)](#)

[View full screen map](#)

<http://www.neisgei.org>

NEISGEI - Mozilla Firefox

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http://www.neisgei.org/

NEISGEI Networked Environmental Information Systems
for Global Emissions Inventories

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My Account - Sign Out
Add Content - Layout - Page Settings

Search...
Guest (Public) ▾

Home Resources Discussion People About Developer Zone Help

Resources - Configuration - Close

Name Google Maps Emissions Browser
Posted on 2006-12-12 16:38:34.0
URL <http://niceguy.wustl.edu/EmissionsGoogleMaps/>
Description A tool that combines the widely used GoogleMaps interface with interoperable data access through DataFed. This is a prototype that fits into the "mashup" mold. It works best when using the Firefox web browser.
Note: Some of the datasets are large and are slow to load. The application works best in a FireFox browser.
Posted By Stefan Falke
Views 4

Post Reply

Google Maps Emissions Browser

Emissions Google Maps - Mozilla Firefox

File Edit View History Bookmarks Tools Help del.icio.us

http://niceguy.wustl.edu/EmissionsGoogleMaps/?mapTime=1995-03-01T00&frequency=year

Map Time: 1995-03-01T00 < > step Yearly Update Map Reset Map Roads/borders:

Points: EPA_AirMarkets Export Image GoogleSat Export

This data accessed from [DataFed: EPA AirMarkets](#)

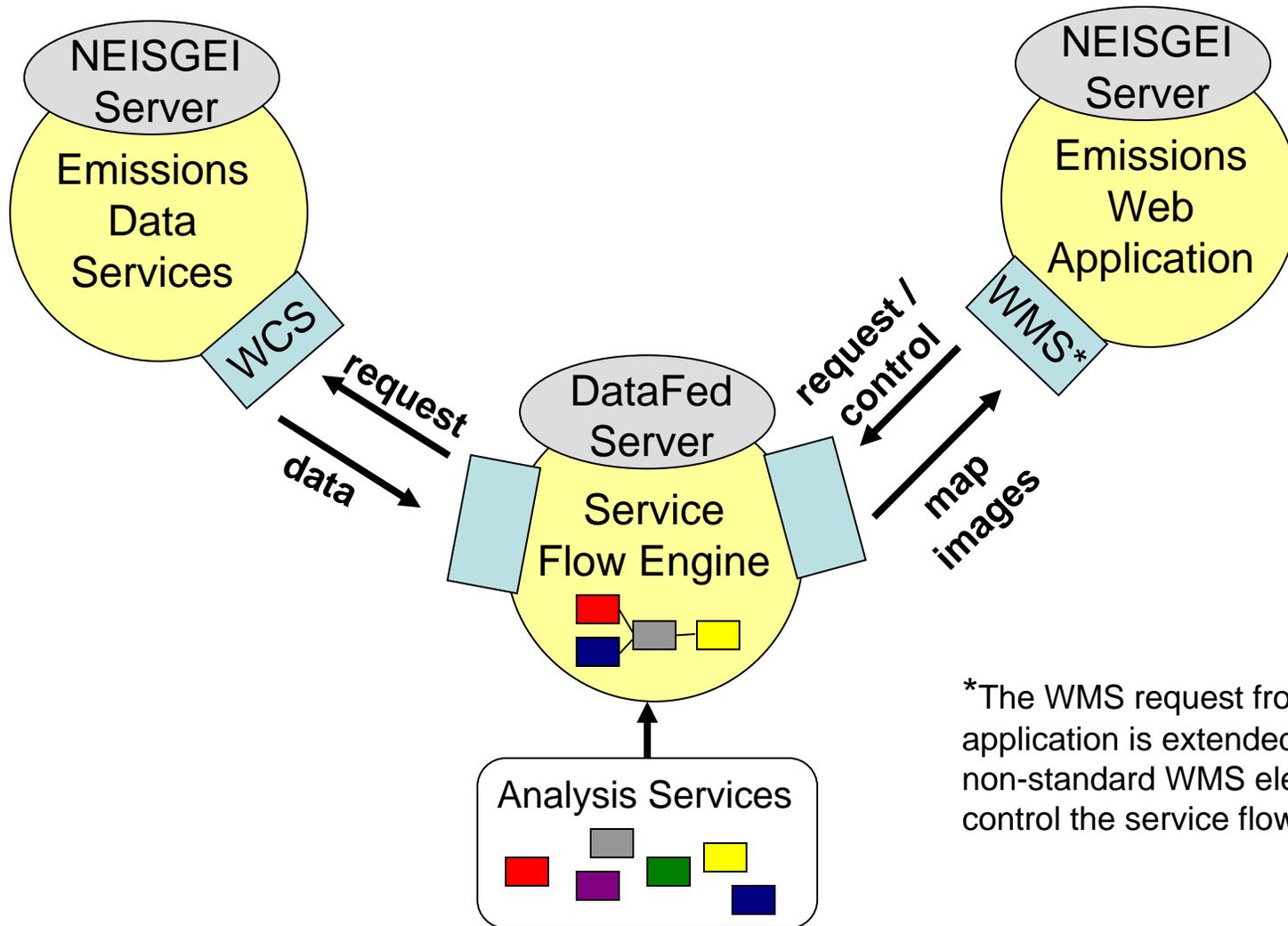
LOCATION	Tons
10	36975
1001	91170
1004	5520
1007	3651
1008	51630
1010	34088
1012	3242
1024	315
1032	1398
1037	167
1040	13289
1043	20642
1046	7194
1047	4880
1048	7450
1056	0
1058	9167
1065	0
1073	7276
1077	14219
1102	1102

<http://niceguy.wustl.edu/EmissionsGoogleMaps/>

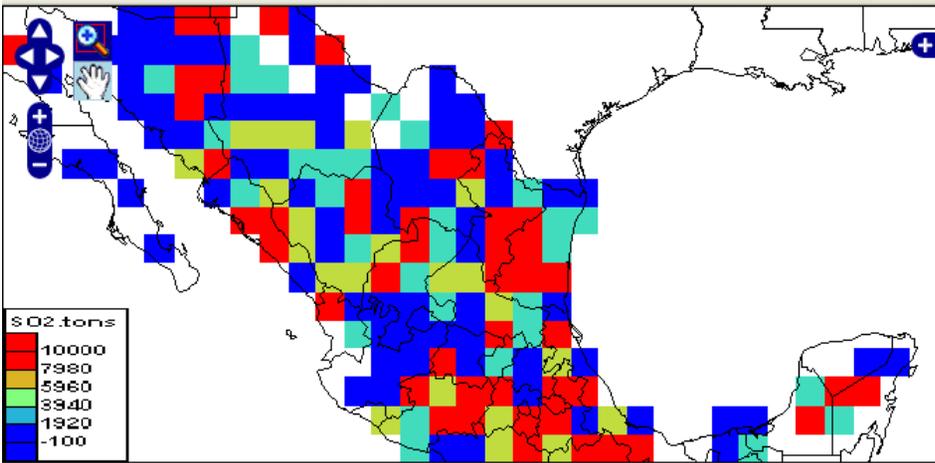
Web Application Framework

Web services are modular components that gain value when connected to form a **chain of services**, thereby creating a web application.

The services can be **geographically distributed** among servers. The services come together by way of a **workflow**, which constructs and manages a set of services chained together.



*The WMS request from the web application is extended to include non-standard WMS elements that control the service flow.



Emissions Comparison Tool

Select the emissions inventories you'd like to analyze in maps a and b below. Set your comparison and calculate the results to be shown in the map to the left.

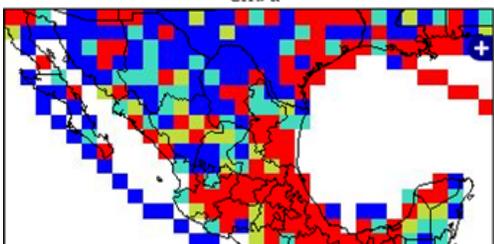
Select expression: (a/907.18)

Scale Min/Max:

Grid Resolution:

Use units:

Grid a

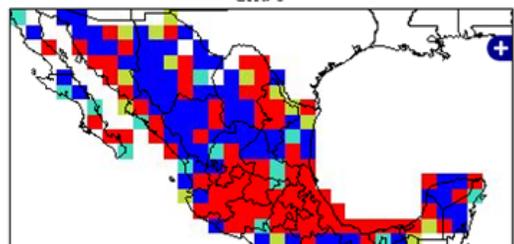


Dataset: Param:

Time:

Scale Min/Max: kg

Grid b



Dataset: Data:

Param:

Time:

Operation:

Rows/Columns: Use EDGAR

Scale Min/Max: tons

Emissions Data Access Services

We developed an web interfaces for emission inventory data:

- **US NEI** - estimates of annual (1999, 2002) emissions of air pollutants for point, area and mobile sources.
- **Mexico NEI** – 1999 emissions estimates for point, area, motor vehicle, nonroad mobile, and natural souces.
- **Canada NPRI** – annual emissions estimates (criteria pollutants started in 2001).
- **EDGAR** – gridded global emissions estimates at 1X1 degree resolution.
- **RETRO** – gridded global emissions estimates at 0.5X0.5 degree resolution.

Acknowledgements

- EDGAR-HTAP
 - John van Aardenne, Suvi Monni (JRC/IES)
- NEISGEI
 - Stefan Falke, Rudy Husar (Washington University, St Louis)
 - Greg Stella (Alpine Geophysics)