



# Developing Web-based Mapping Services for Public Health Applications

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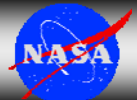
Karl K. Benedict

William Hudspeth

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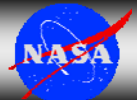
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# Presentation Outline

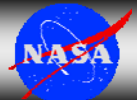
- What is PHAIRS?
  - Project goals
- Developing a service-oriented architecture
  - Data storage
  - Data processing & product generation
- Product delivery
  - Client interface prototype
- Next steps





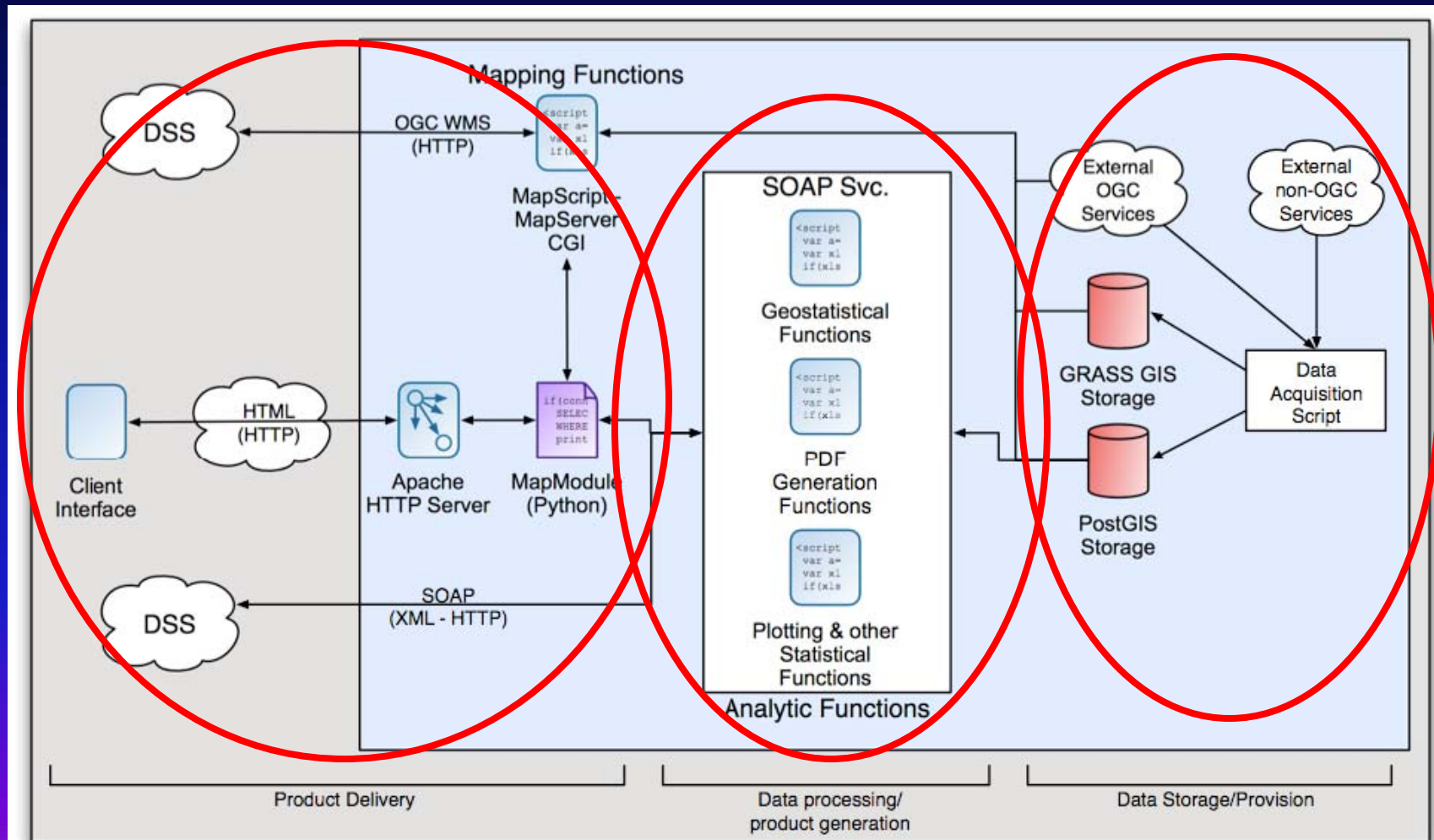
# What is PHAIRS?

- Public Health Applications in Remote Sensing
- Sponsor, partners, and collaborators
- Project goals – use Earth observation data to...
  - Improve dust forecast model outputs
  - Enhance public health DSSs
- Project components
  - Assessing & processing satellite data
  - Dust forecast modeling
  - **Web-based services**





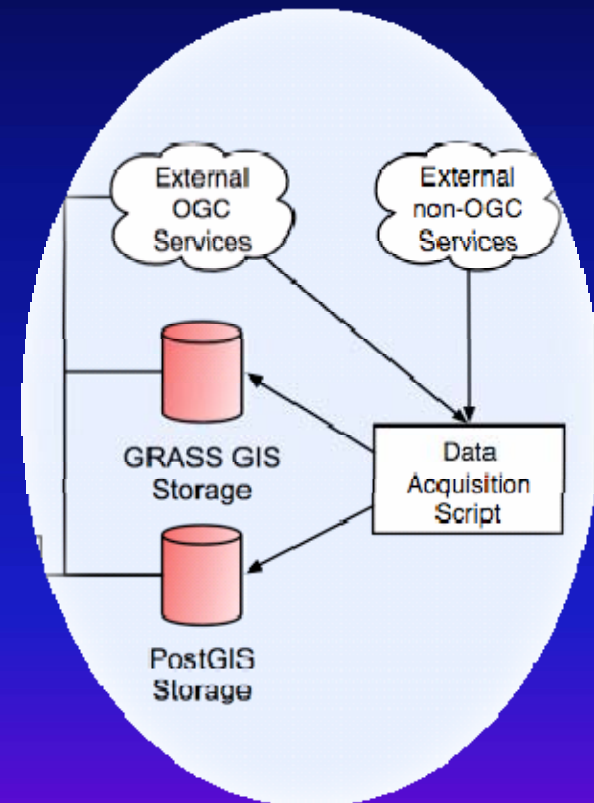
# Developing a Service Oriented Architecture





# Data Storage

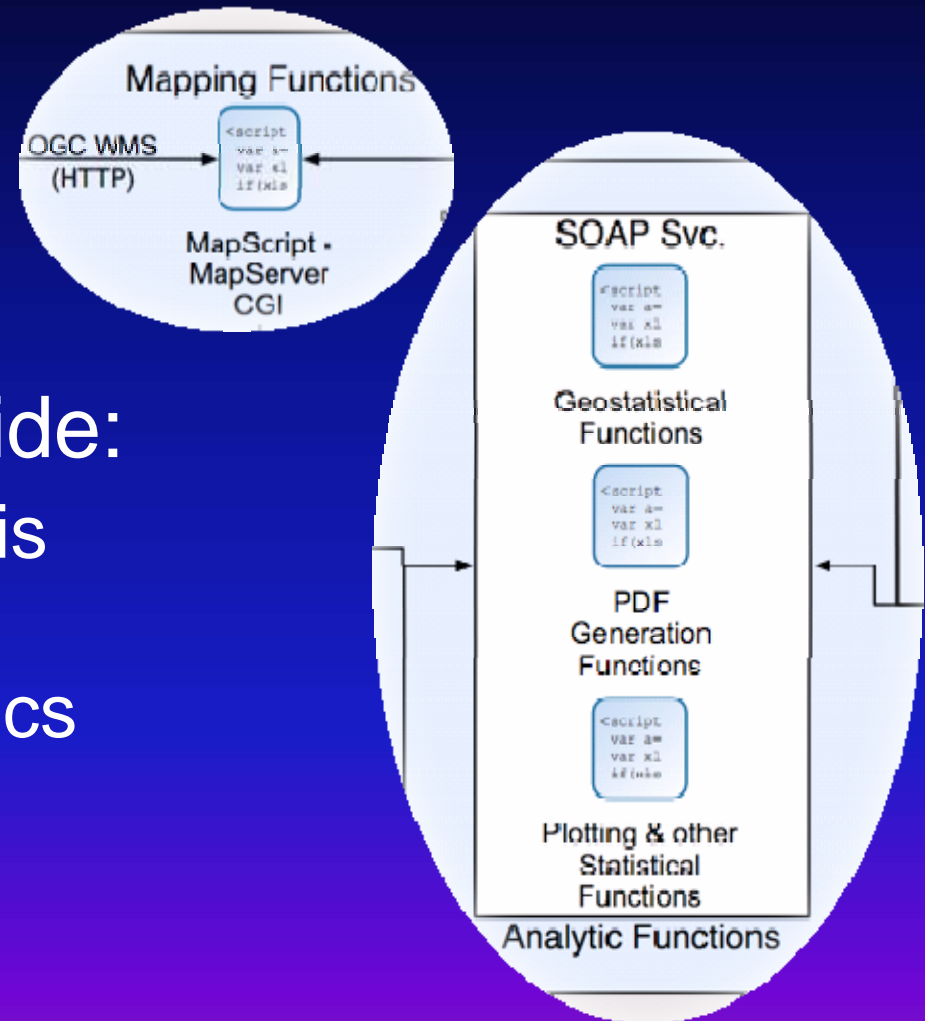
- Store geospatial and related attribute data, and external data resources
- Includes:
  - GRASS GIS
  - PostGIS
  - External OGC service providers
  - External non-OGC service providers





# Product Generation

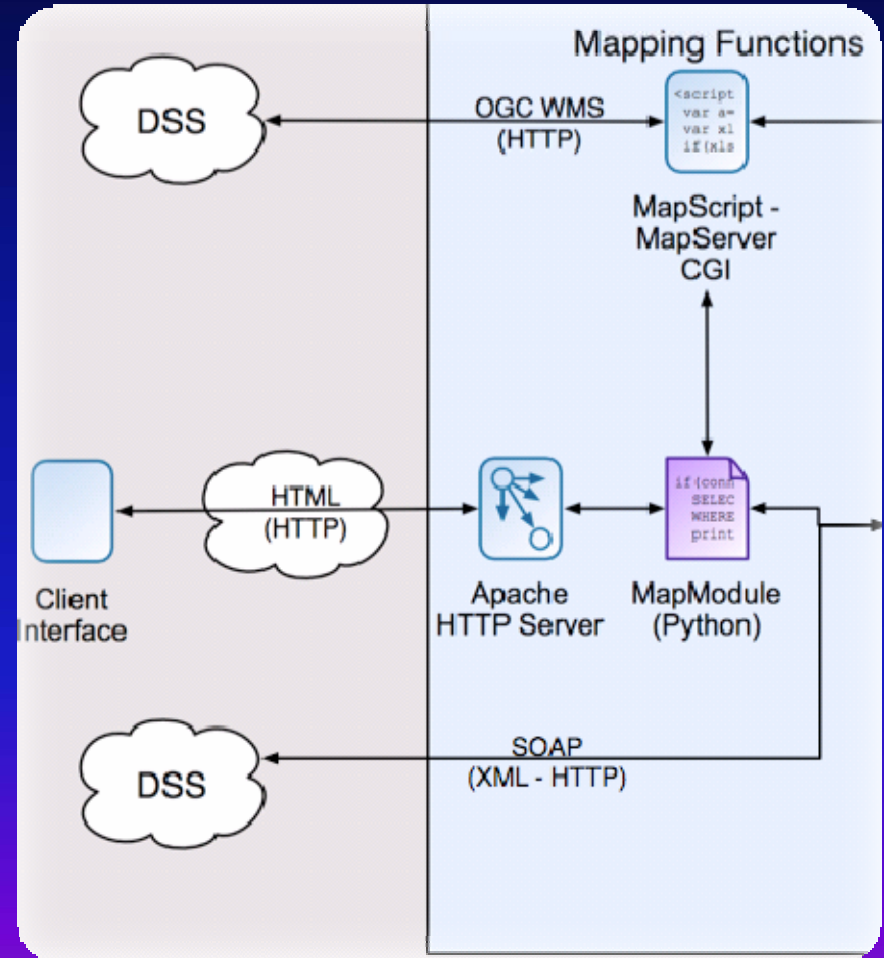
- Two service models
  - OGC WMS
  - W3C SOAP
- SOAP services provide:
  - Geostatistical analysis functions
  - Statistical and graphics generation
  - High quality PDFs





# Product Delivery

- Products delivered via
  - OGC WMS
  - SOAP services
  - Client interface
- Enhancing DSSs by
  - Integrating PHAIRS products into existing DSS
  - Linking directly from DSS to the client interface



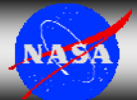


# Client Interface Prototype

Geographic extent tools

Layer tools and legend

Date and time tools





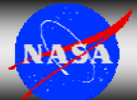


# Client Interface Prototype

Active  
analytical  
tools

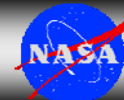
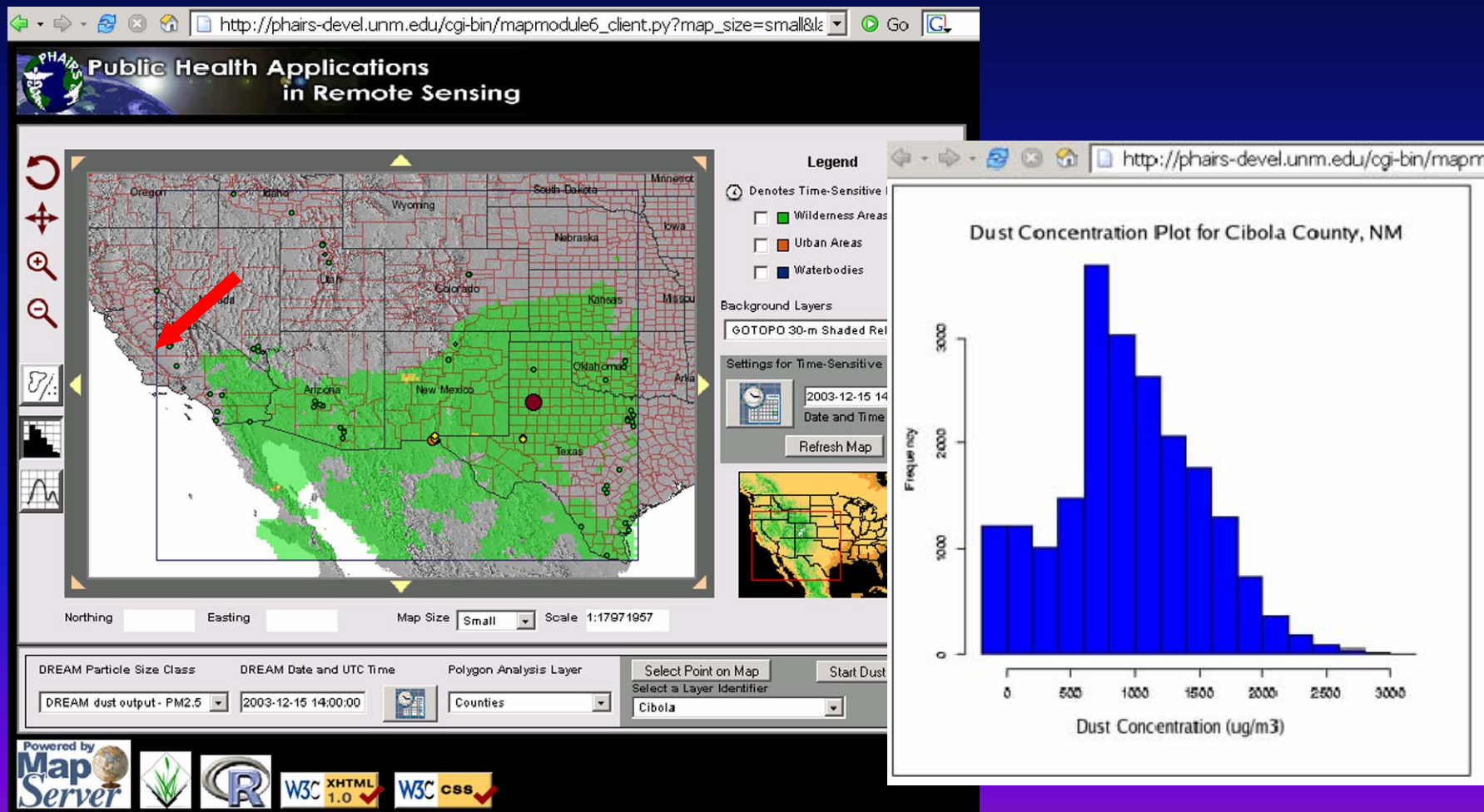


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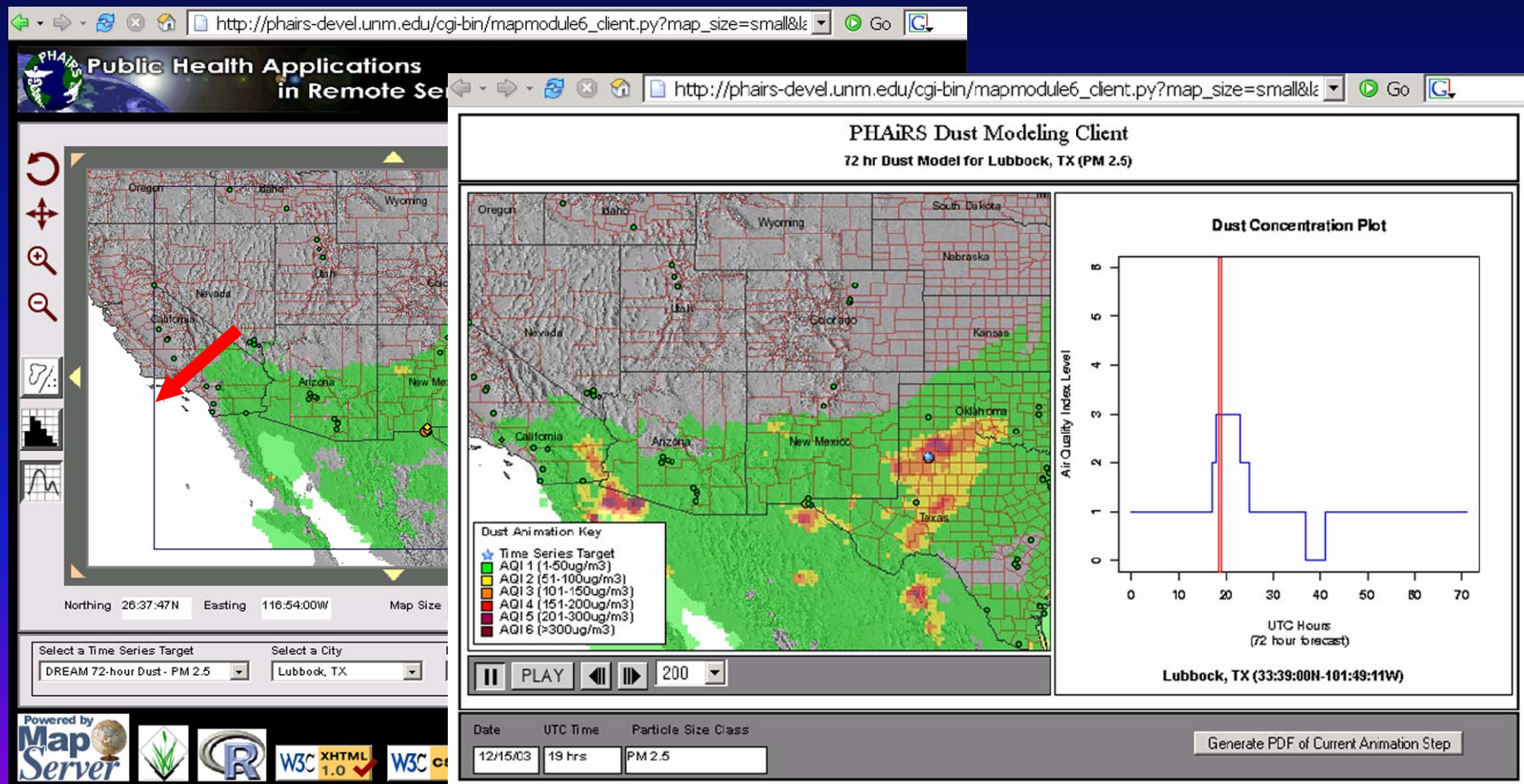


# Client Interface Prototype: Density Plot

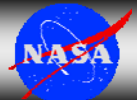




# Client Interface Prototype: Time Series

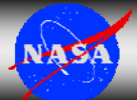
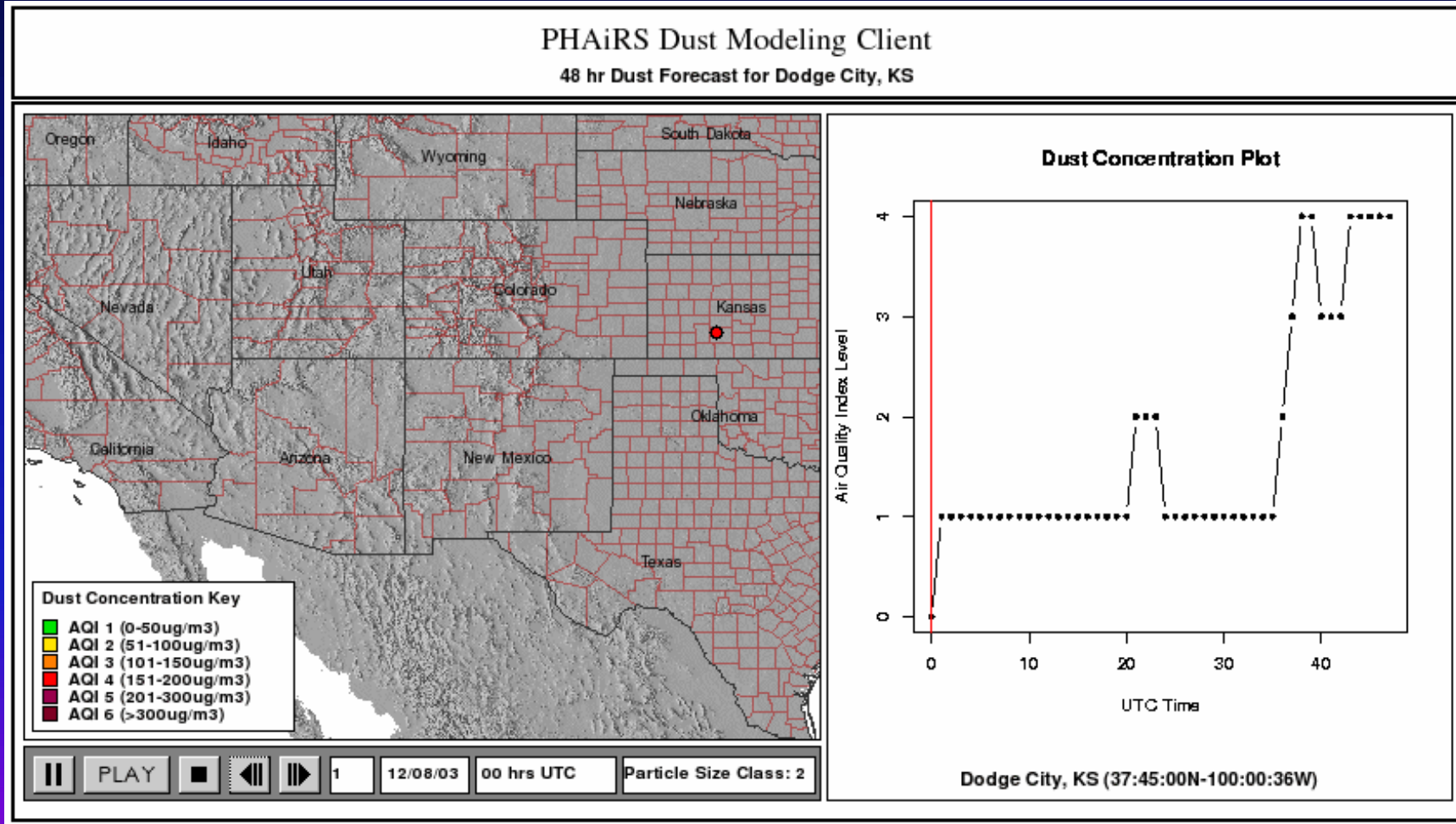


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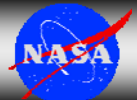
# Client Interface Prototype: Animation





# Next Steps

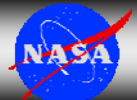
- Develop time-enabled OGC services for the DREAM model output and meteorological forecast models
- Enhance the geostatistical functions and publish as SOAP services
- Refine hard-copy map generation SOAP service
- Beta-test services





# Acknowledgements

- NASA REASoN Program
- Project Partners
  - University of Arizona, Department of Atmospheric Sciences
- Collaborators
  - Sandia National Laboratories
  - ARES Corporation
  - Arizona Department of Health Services
  - Pima County Department of Environmental Quality





# Public Health Applications in Remote Sensing

**Thank you.**

**<http://phairs.unm.edu>**



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