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Expanding the Availability of Geo-referenced Weather Observation and Forecast Data

Carissa Brittain, A1C, USAF

Jon Goldtrap, TSgt,
USAF



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Abstract



Weather phenomenon have far-ranging impacts to both military and civilian activities. While many of these activities can be mapped and planned using GIS, weather information, in a GIS format, is scarce. Beginning in November, 2004, the Air Force Weather Agency (AFWA) began exploring the possibility of making weather observation and forecast data available to GIS users. The creation of AFWA's GIS team marks a significant milestone on the path to that goal.

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Abstract (cont)



The team chose an ArcIMS site as their first proof-of-concept project. For the first time in February, 2005, the team demonstrated the impacts of weather observations and forecasts on a fictitious military mission. The team's development efforts continue toward a goal of making geo-referenced weather observation and forecast data available to improve both military and civilian planning efforts, ultimately supporting 3-dimensional data.

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Acknowledgments



■ GIS Team Members

SrA Keith Morris

A1C Carissa Brittain

A1C Justin Schmidt

■ Maj Newton and other AFWA personnel

■ Steve Richart, AFWA/DNXT

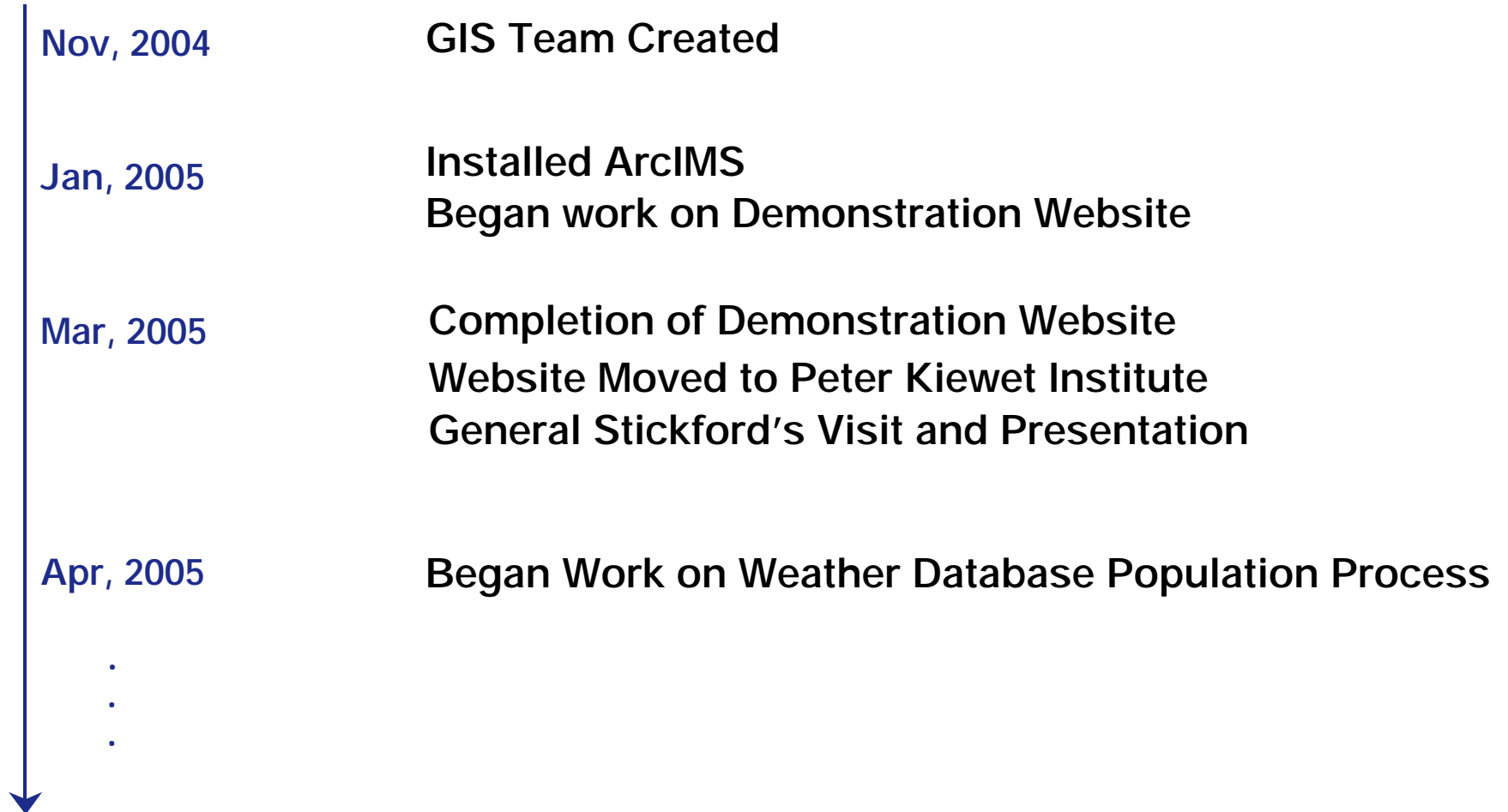
■ Matt Meyers, Peter Kiewet Institute

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Timeline



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Overview



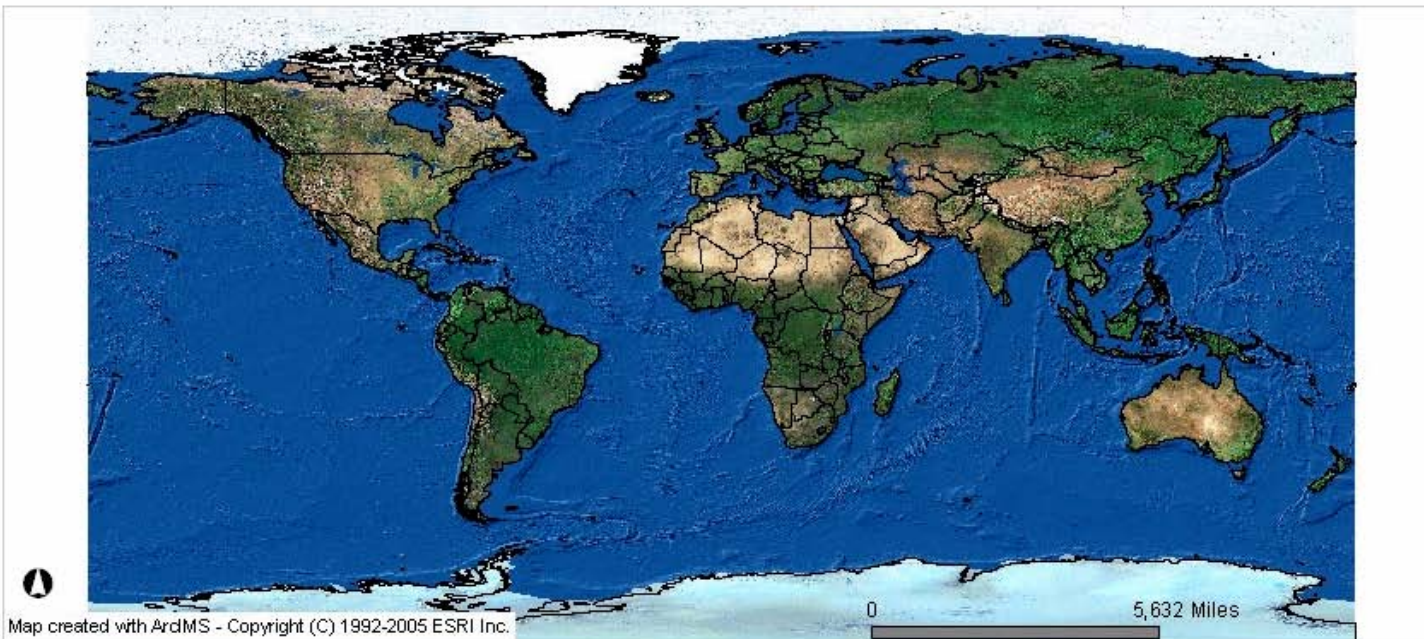
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INTERACTIVE MAPPING SERVICE

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Toolbox



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LAYERS

- Political
- Forecast
- Global Observations
- Satellite Imagery
- Radar Imagery
- Geography
- Flight Demo

Refresh Map

Auto Refresh

LEGEND

Click on a layer's caption in the list above to view its corresponding legend.

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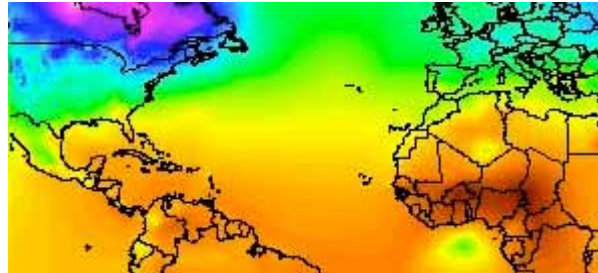
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Data

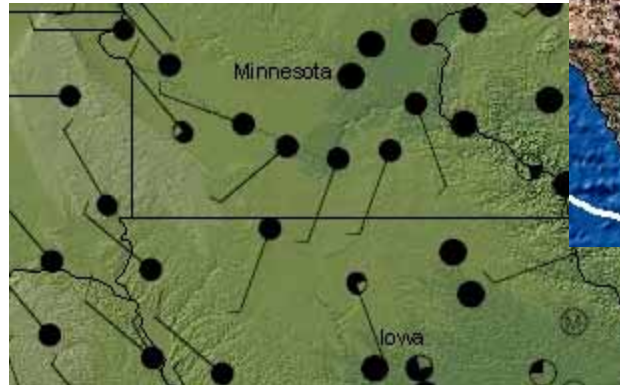


LAYERS

- Political
- Forecast
 - T02 (CONUS)
 - 700mb
 - GPH
 - Contour
 - Raster
 - TEMP
 - RH
 - T04 (Middle East)
- Global Observations
 - TEMP
 - RH
 - DP
 - WIND
- Satellite Imagery
- Radar Imagery
- Geography
- Flight Demo



Temperature Observations



Wind Speed, Direction and Cloud Cover



Geopotential Height

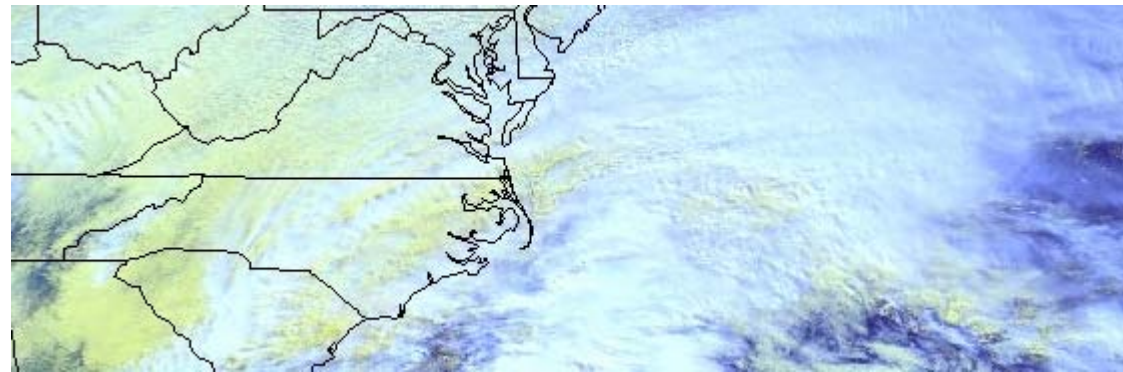


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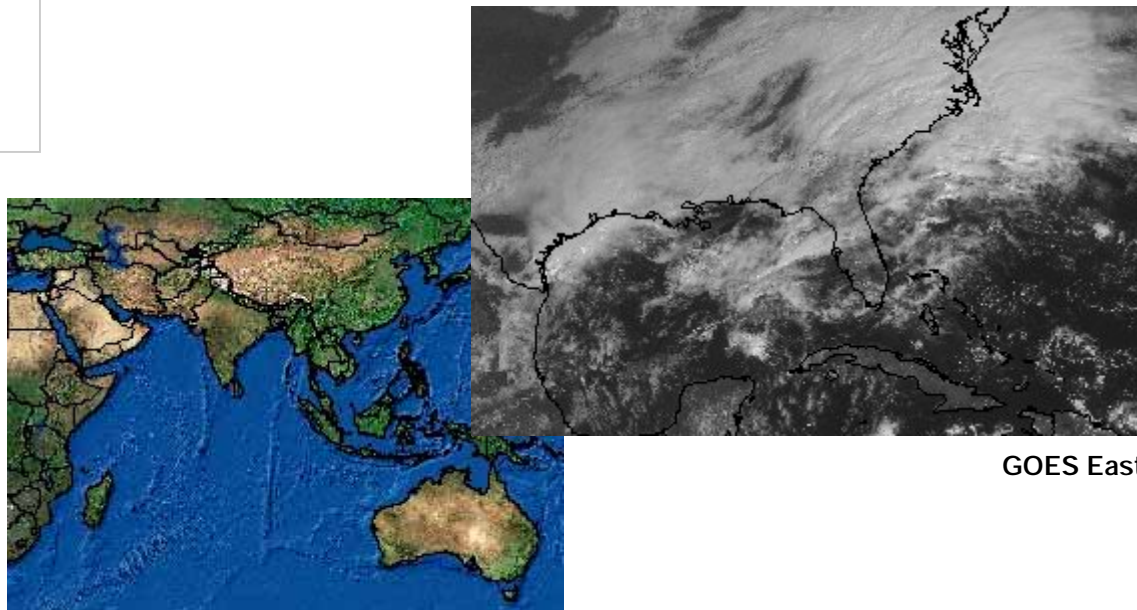
Data



- LAYERS**
- Political
 - Forecast
 - Global Observations
 - Satellite Imagery
 - AVHRR
 - GOES
 - Radar Imagery
 - 1528Z
 - 1542Z
 - 1557Z
 - 1616Z
 - Geography
 - Flight Demo



AVHRR



GOES East

Geographic/Political

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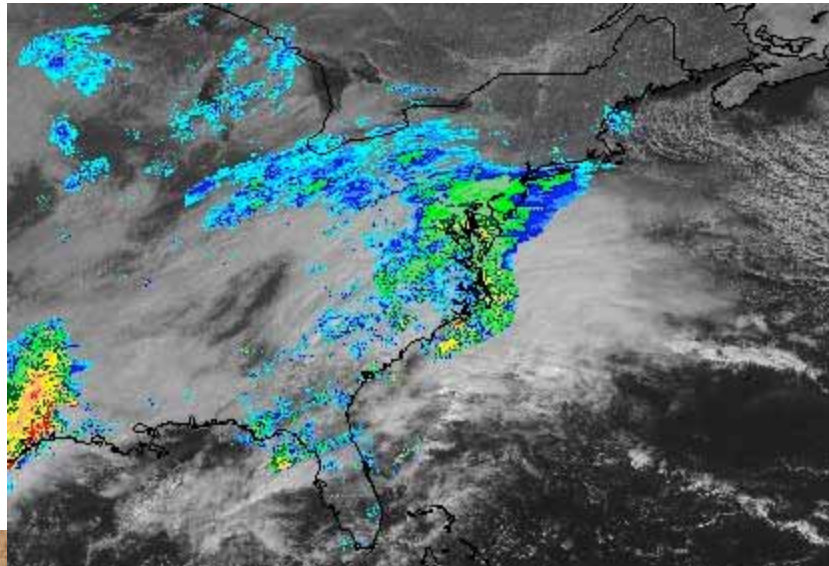


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Data



- LAYERS**
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Radar &
GOES



Radar &
Geographic/Political



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Flight Path Demo



- LAYERS**
- Political
 - Forecast
 - Global Observations
 - Satellite Imagery
 - Radar Imagery
 - Geography
 - Flight Demo
 - Severe Weather - 16000FT
 - Flight Cities
 - Original Flight Path - 16000FT
 - New Flight Path - 16000FT



Original Flight Path



Athens - Baghdad No Fly Area



New Flight Path

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Future Efforts



- Global range of observation and model data
- Pre-defined decision aids
- Automatic updates
- Download capability
- 3D imagery capabilities

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References



NOAA – GOES & AVHRR Images

<http://www.gis.ssd.nesdis.noaa.gov/>

HQ AFWA – Observation and Model Data

AFWA ArcIMS Demonstration Website

<http://afwa.ist.unomaha.edu/website/imsdemo>

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Author Information



■ Primary Author

Carissa Brittain, A1C

Applications Programmer, GIS Team, HQ AFWA/SCSA
carissa.brittain@afwa.af.mil

■ Secondary Author

Jon Goldtrap, TSgt

NCOIC GIS Team, HQ AFWA/SCSA
jon.goldtrap@afwa.af.mil

AFWA Office of Public Affairs

106 Peacekeeper Ln. Suite 2N3
Offutt AFB, NE 68113

(402) 232-8166

<http://afweather.afwa.af.mil/>

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