WxAnalyst
APPLIED GEOGRAPHY

COLLADA™ Computing
for Geophysical Applications

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WxAnalyst, Ltd.

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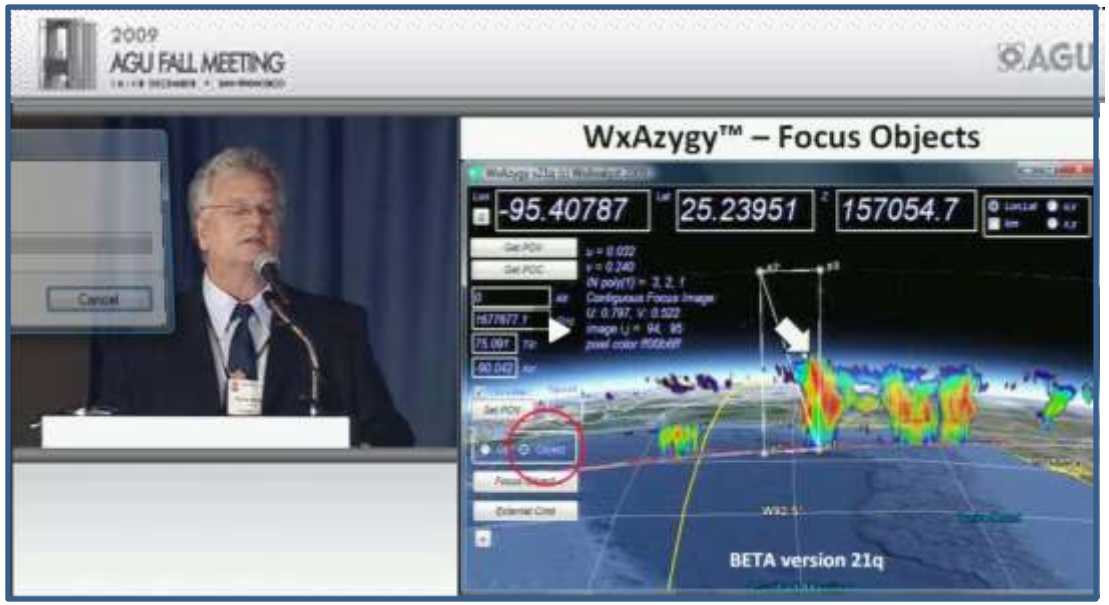
Hawaiian Airlines

Earth Science Technology Forum 2011

GIS Function Coupling

1. *GIS Function Coupling for Virtual Globes – 4D UI*

NASA SBIR 2008-S6.04-9159 (LaRC)



http://www.ccs.neu.edu/course/cs4300/HW4/HW4.html

1

Patent Pending 12/585,025

Fall AGU (2009)

WxAzygy®

2009 | 2010 | 2011 | SBIR Phase 3

http://wxanalyst.com/WxAzygy

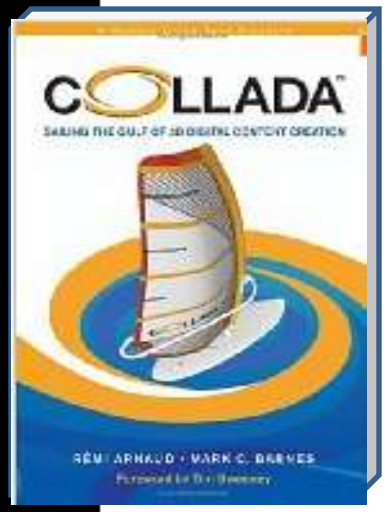
Game Changers

COLLADA Open Standard

Play Station 3 Duck demo

WMTeWu 2 videos Subscribe

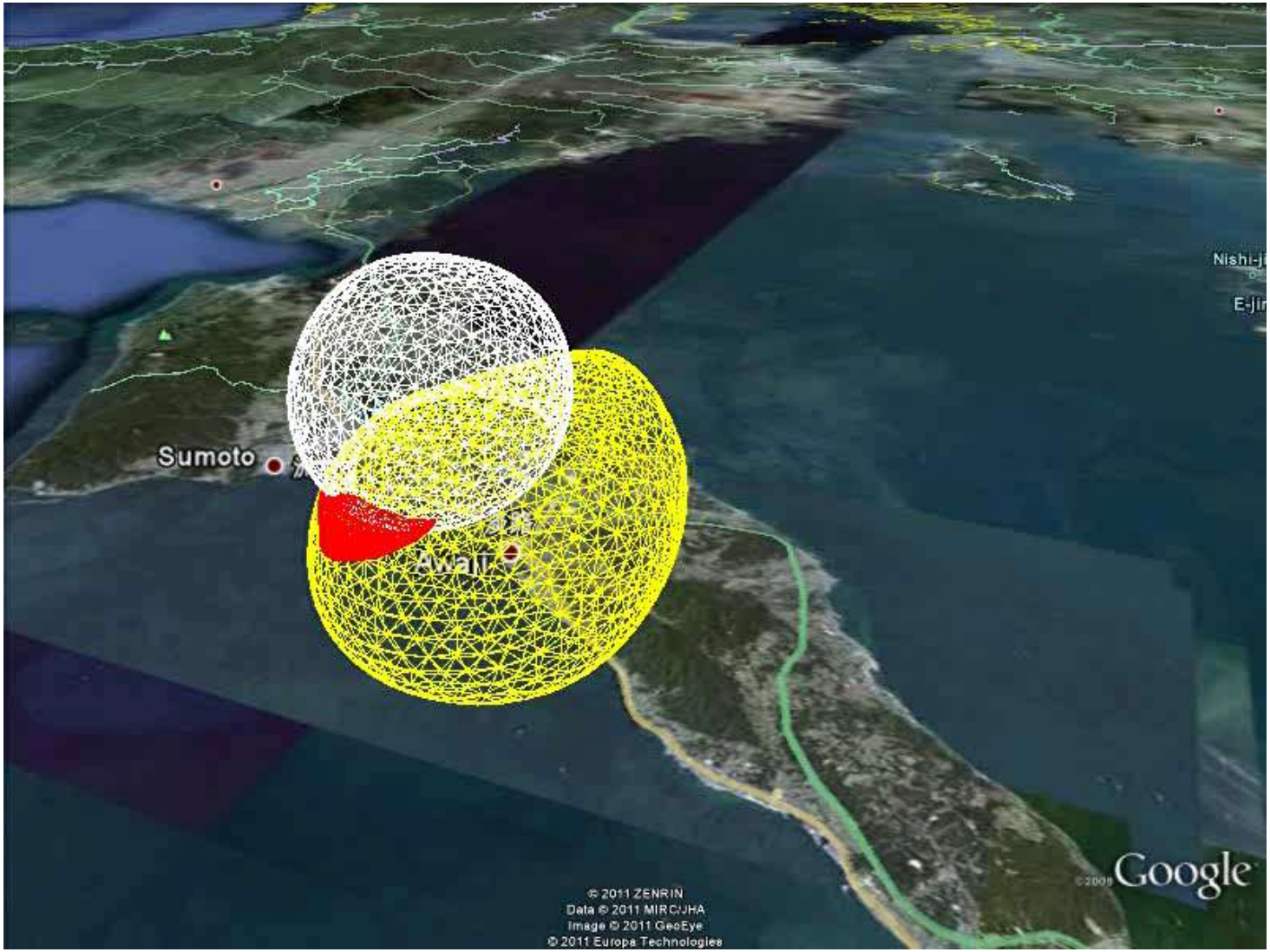
COLLADA 1.4.0 (Jan 2006)



Rémi Arnaud

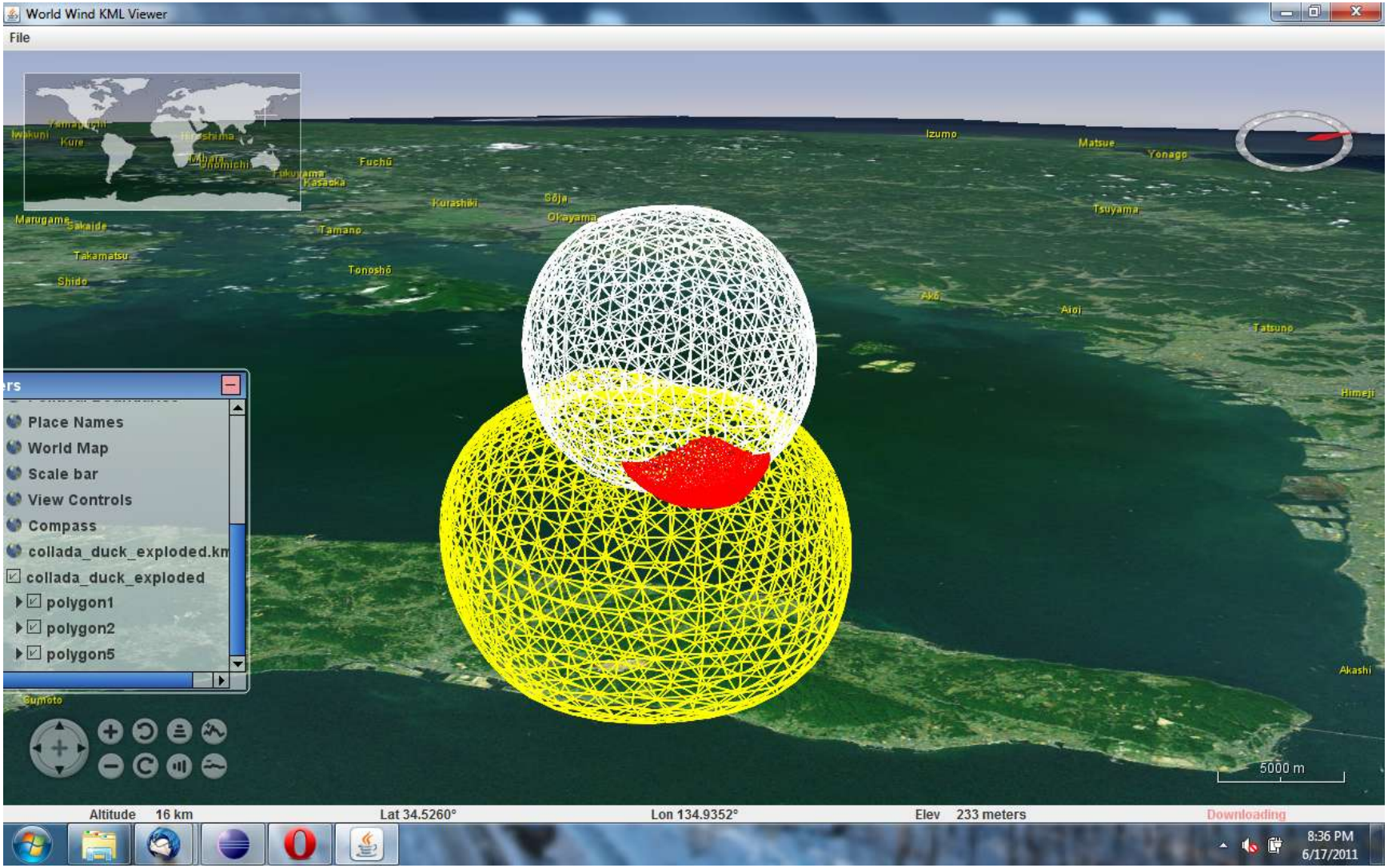
Game Changers

COLLADA™ 1.4.0 in Google Earth 4.x (Jan 2007)



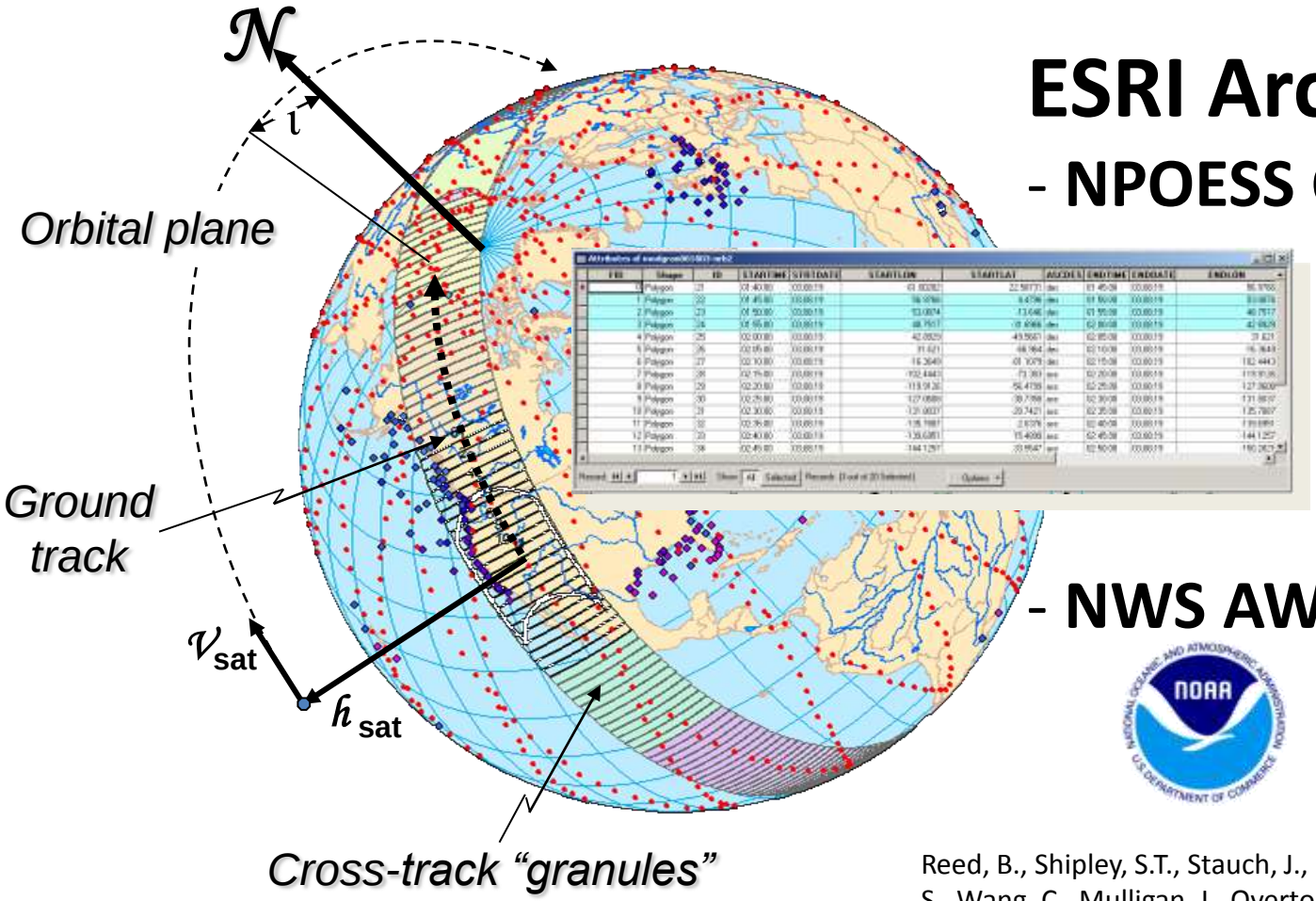
Game Changers

COLLADA™ 1.4.1 in NASA World Wind (2011)



Game Changers

Spatial-relational coupling



ESRI ArcGIS

- NPOESS Cal/Val (2004)

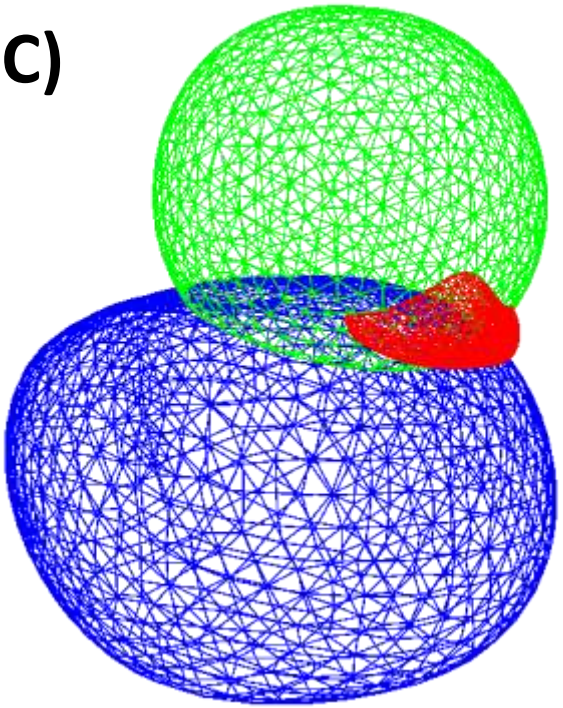
- NWS AWIPS (1995)

Reed, B., Shipley, S.T., Stauch, J., Gillespie, D., Walth, M., Young, S., Wang, C., Mulligan, J., Overton, J., Zajic, J., and A. Goldberg (2004), Application of GIS for Data Quality Monitoring in the NPOESS Ground Data Processing System, 20th IIPS, Seattle, WA

COLLADA Computing

2. NASA SBIR 2010-S6.03-9634 (GSFC)

- *Phase 1 in Progress*
- COLLADA Math *in situ* VG
  - ✓ Intersection, Union, …
- 4D UI for editing
- **size** ↓ and ***speed*** ↑

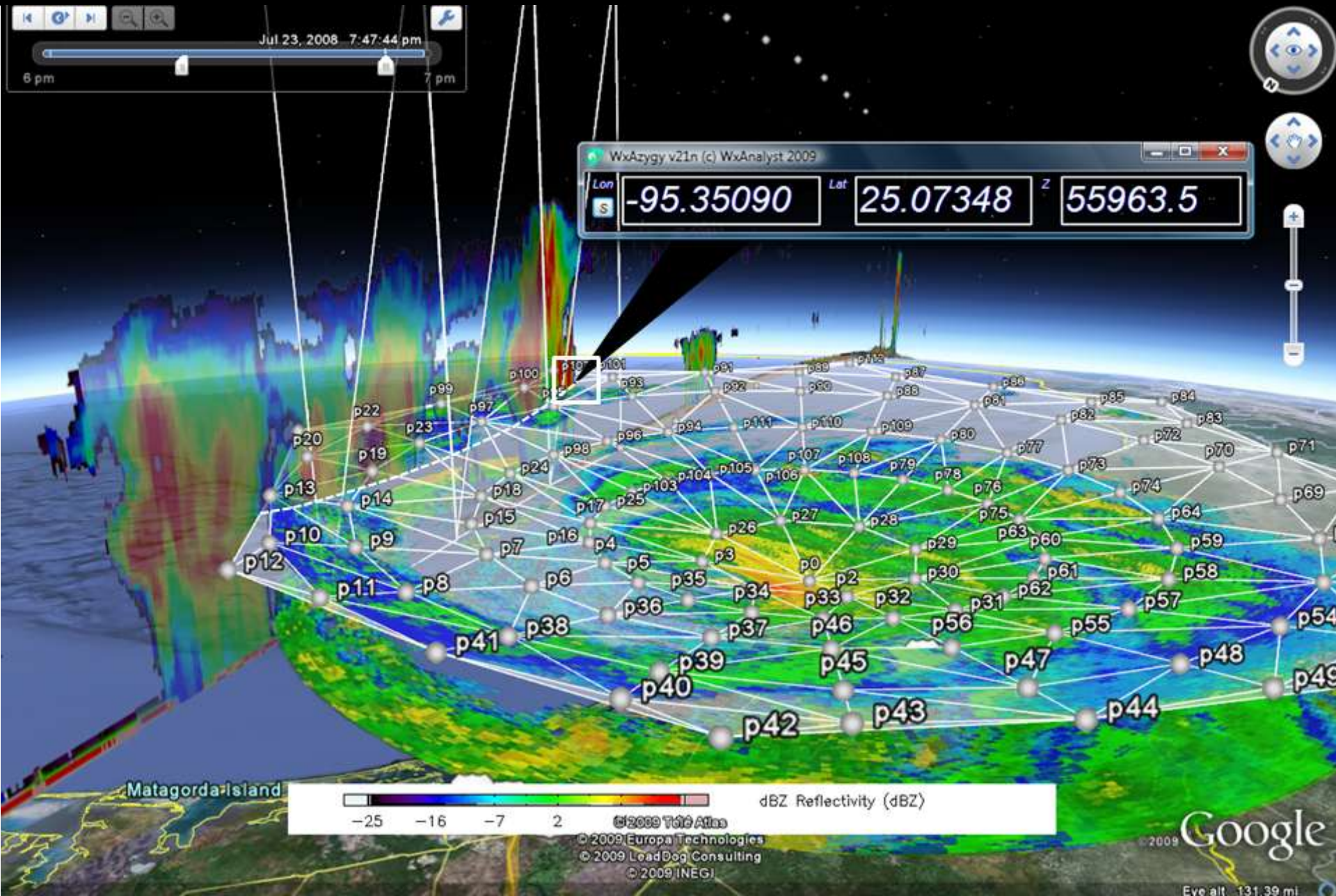


2 **Phase 1 → 8/18/11, Phase 3 to be announced)**

2011 | **Phase 2 tbd (Open Source)**

Hurricane Dolly Demo

WxAnalyst


Jul 23, 2008 7:47:44 pm
6 pm
7 pm
WxAzygy v21n (c) WxAnalyst 2009
Lon
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55963.5
Matagorda Island
dBZ Reflectivity (dBZ)
−25
−16
−7
2
© 2009 Tele Atlas
© 2009 Europa Technologies
© 2009 LeadDog Consulting
© 2009 INEGI
Google
Eye alt 131.39 mi

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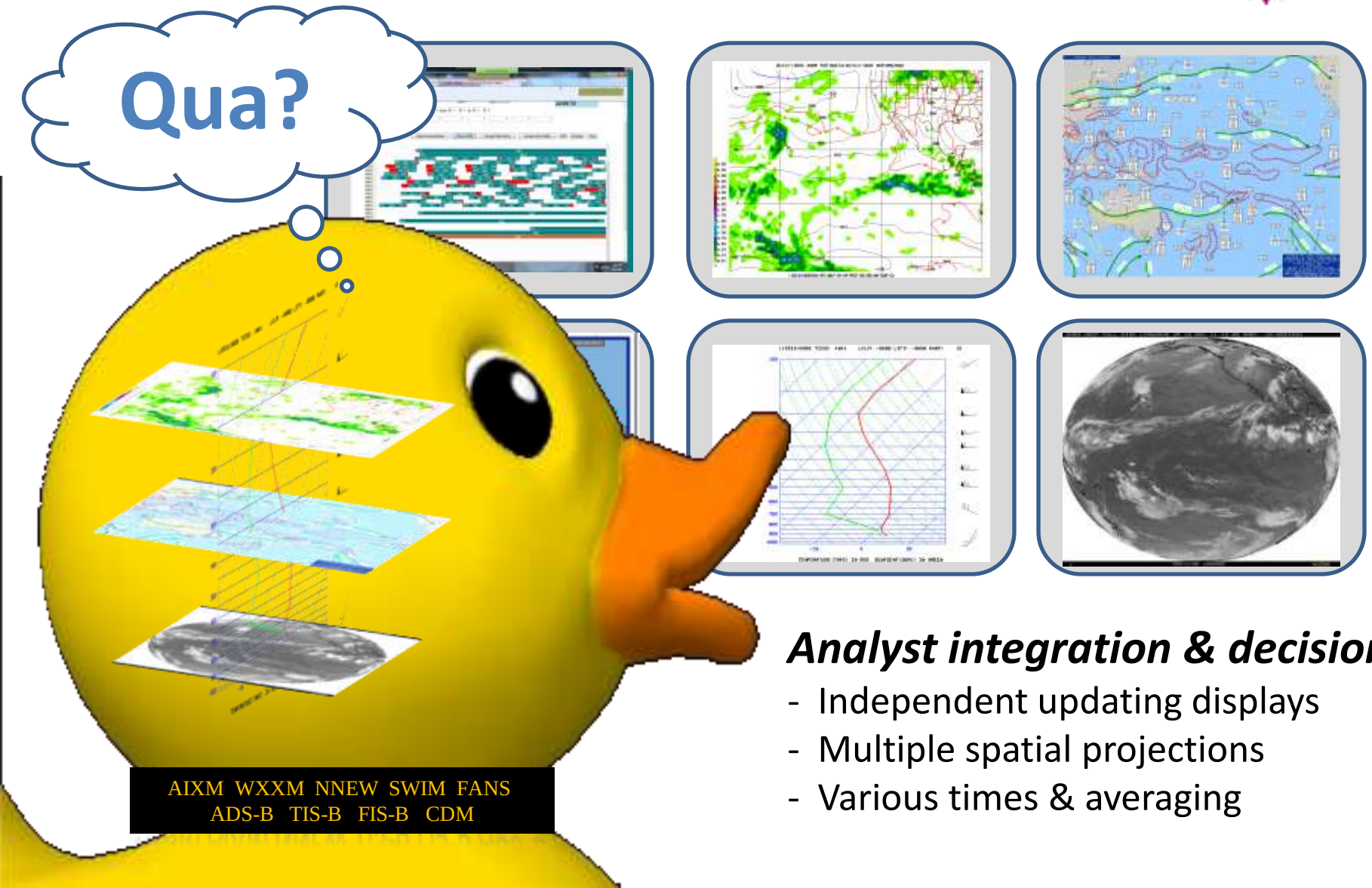
Human Factors

Dispatch Operations Challenge

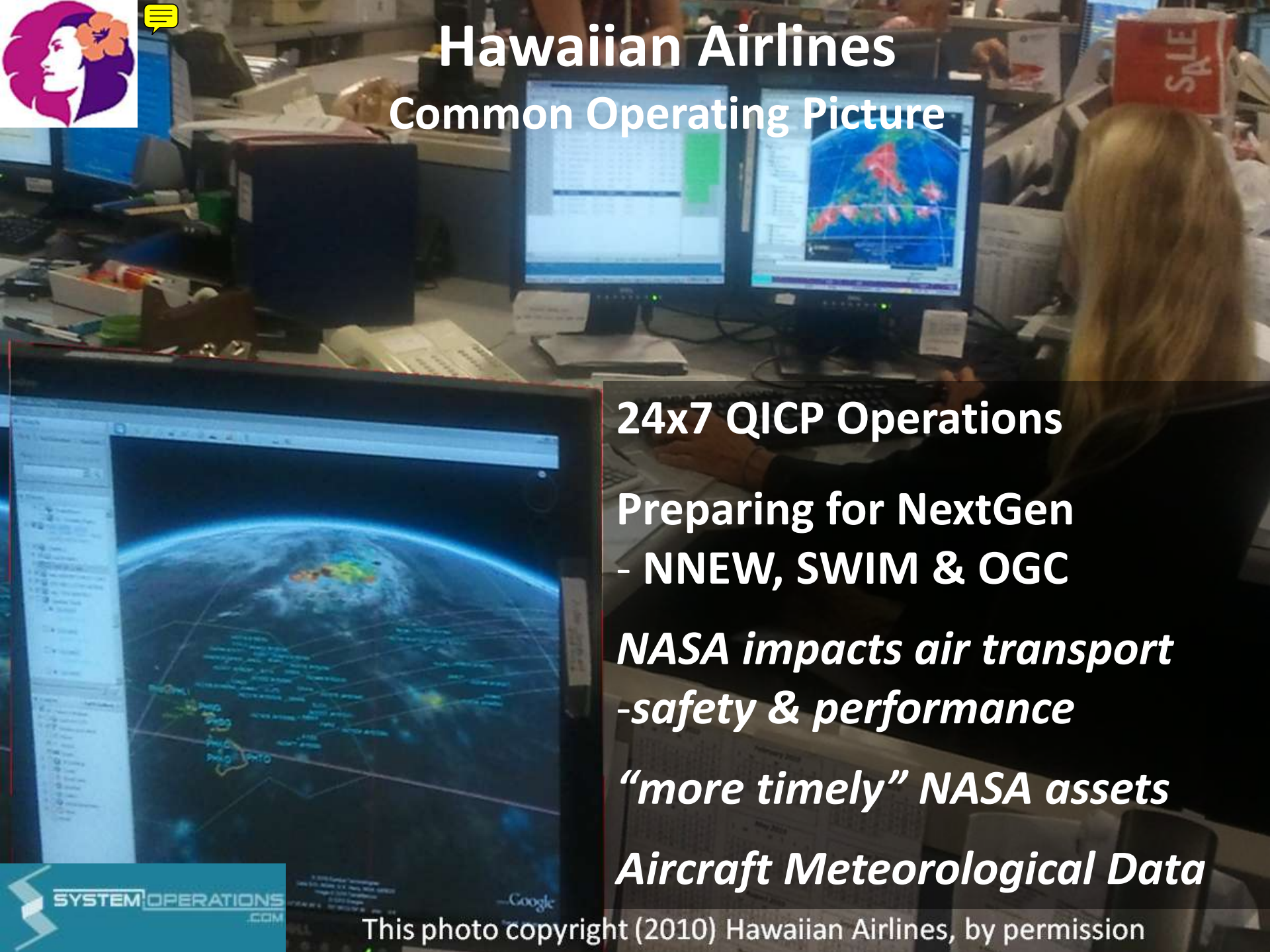


Analyst integration & decision

- Independent updating displays
- Multiple spatial projections
- Various times & averaging

Hawaiian Airlines

Common Operating Picture



24x7 QICP Operations

Preparing for NextGen
- NNEW, SWIM & OGC

NASA impacts air transport
-safety & performance

"more timely" NASA assets

Aircraft Meteorological Data

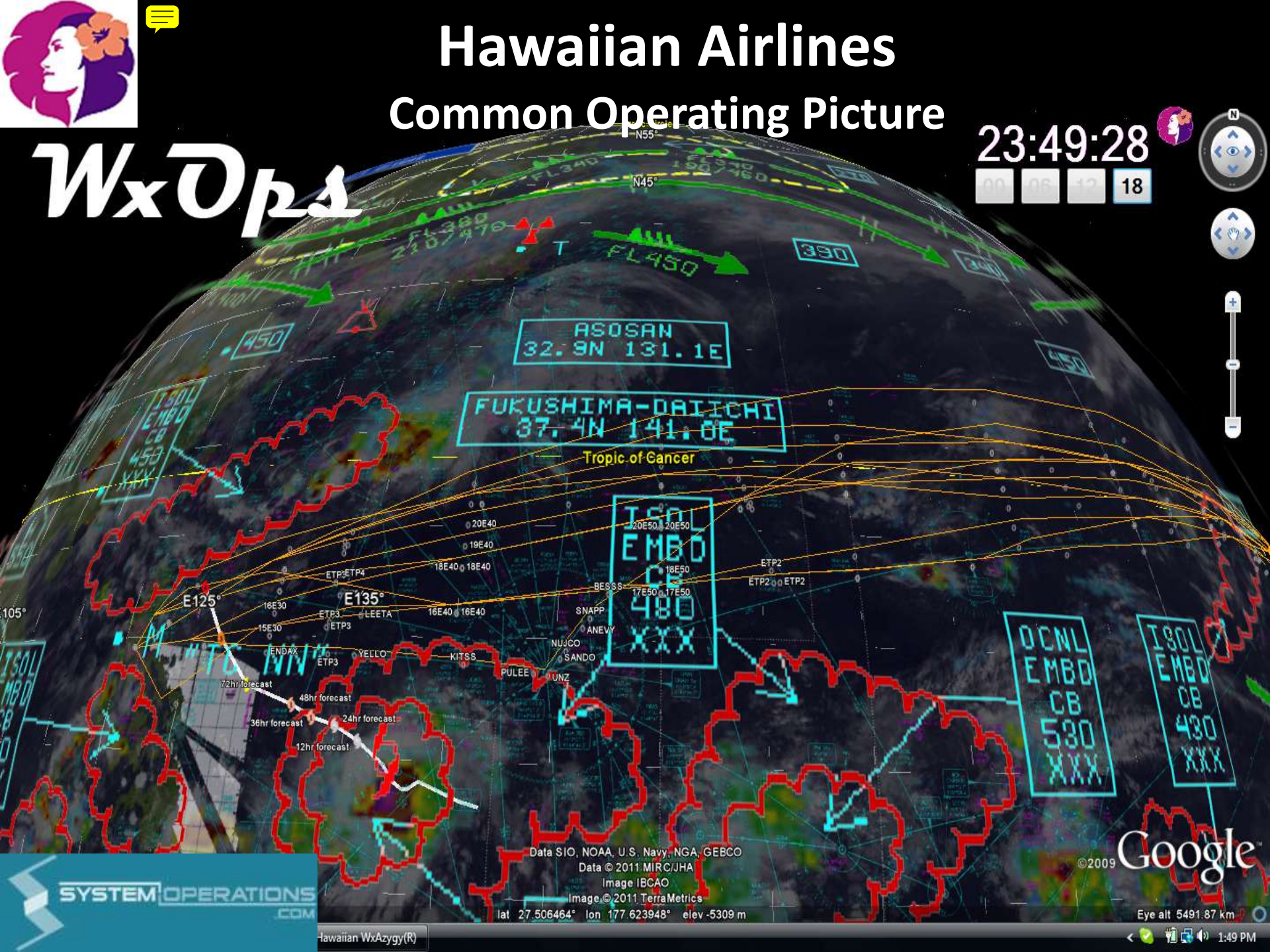
SYSTEMOPERATIONS.COM

This photo copyright (2010) Hawaiian Airlines, by permission

Hawaiian Airlines

Common Operating Picture

WxOps



SYSTEM OPERATIONS .COM

Game Changers

Near Real Time Earth Science Data

National Aeronautics and Space Administration
LANCE

Search

Home — welcome to lance | Data Products — data available | Imagery — imagery available | User Community — connect with users | Help — how to get help

Acknowledgment | Acronyms | Contact Us | FAQ

Welcome to LANCE

Land Atmosphere Near real-time Capability for EOS

LANCE provides access to near-real time (NRT) data products from the MODIS (Terra and Aqua), AMSR-E (Aqua), AIRS (Aqua), MLS (Aura), and OMI (Aura) instruments in less than 3 hours of the observation time. Imagery is also available through the Rapid Response system and fire alerts, data, and a web mapping application are available through the Fire Information for Resource Management System (FIRMS).

LANCE supports a wide variety of applications users who are interested in monitoring natural and man-made hazards. Science quality products, that are generally available within 24 - 48 hours of observation, are available from other data centers to support science analysis. LANCE products are freely available but registration is required.

The following data centers are the elements that produce data for LANCE:

AMSR-E SIPS

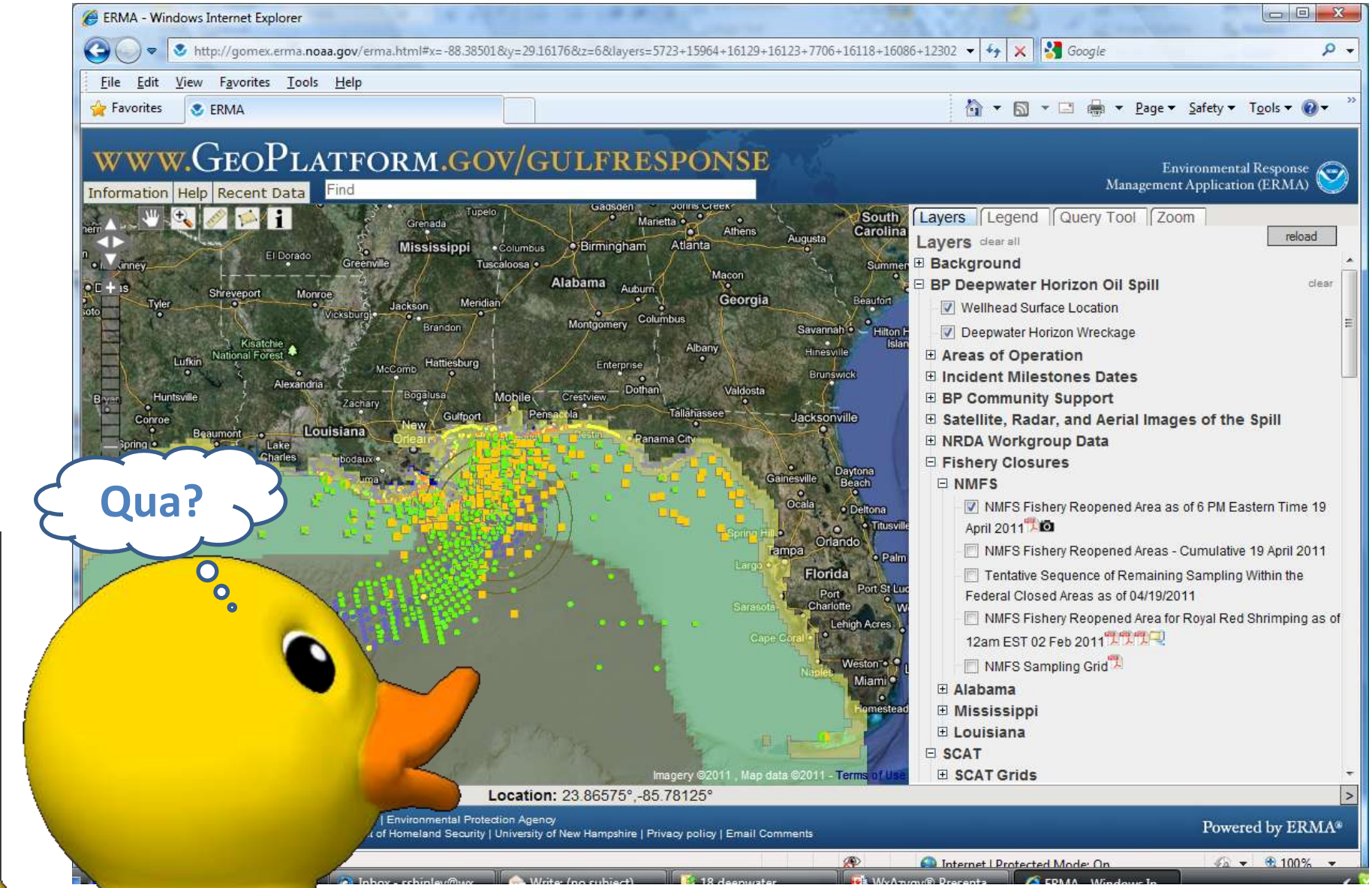
AMSR-E SIPS generates a variety of L2A, L2B, and L3 products including surface soil moisture, rain rate, snow water equivalent, and sea ice concentration. The daily, tiled L3 products are updated incrementally as new data become available. Browse data products and sub-setting tools are planned.

Announcements

May 31, 2011 - EDOS System Maintenance Wednesday June 1, 2011

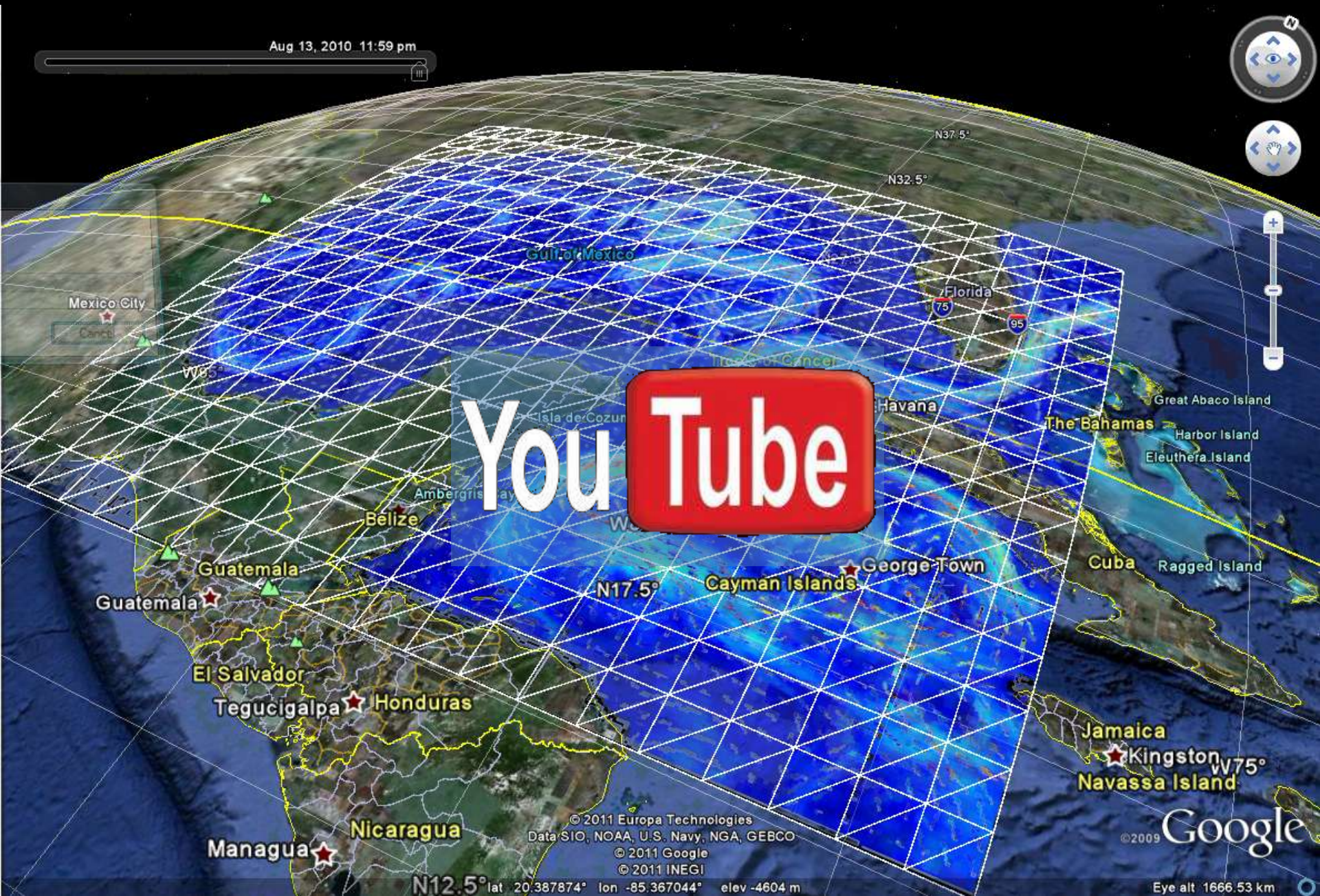
On Wednesday June 1, 2011 (DOY 152) beginning around 13:00 UT, EDOS will be performing system maintenance. The maintenance may result in delays in receiving

Gulf Response in 2D

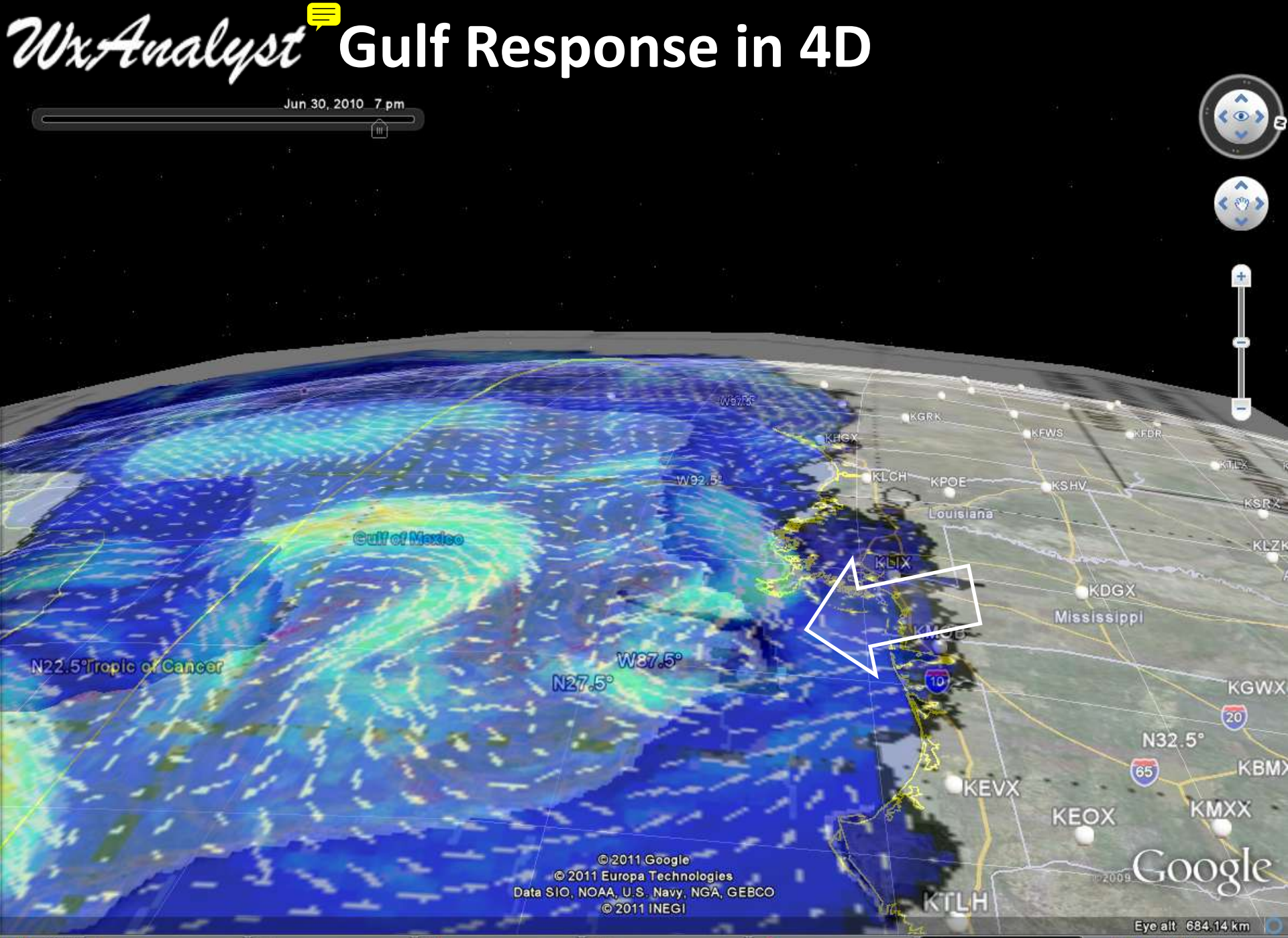


http://gomex.erma.noaa.gov/erma.html

WxAnalyst Gulf Response in 4D

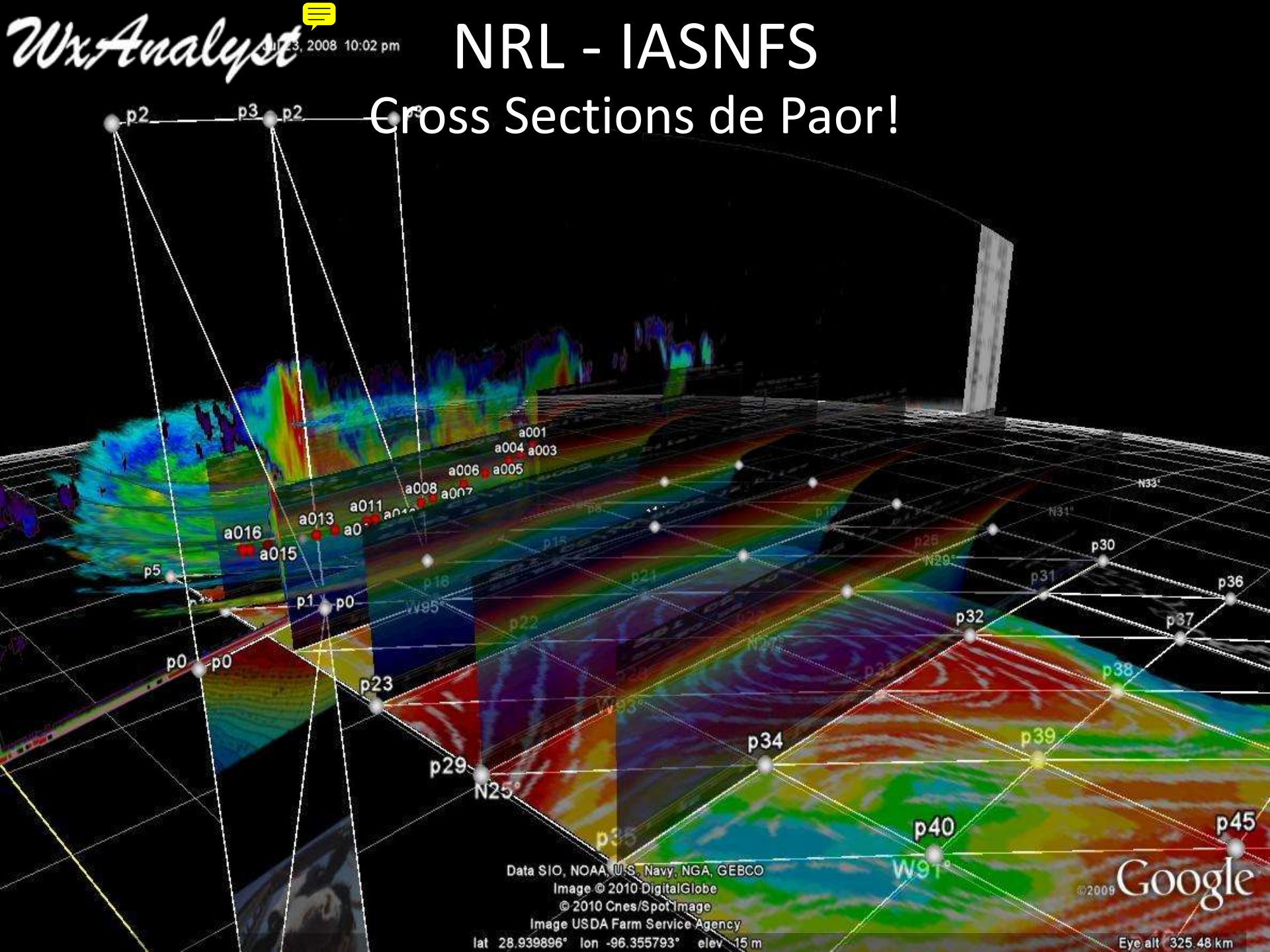


Gulf Response in 4D

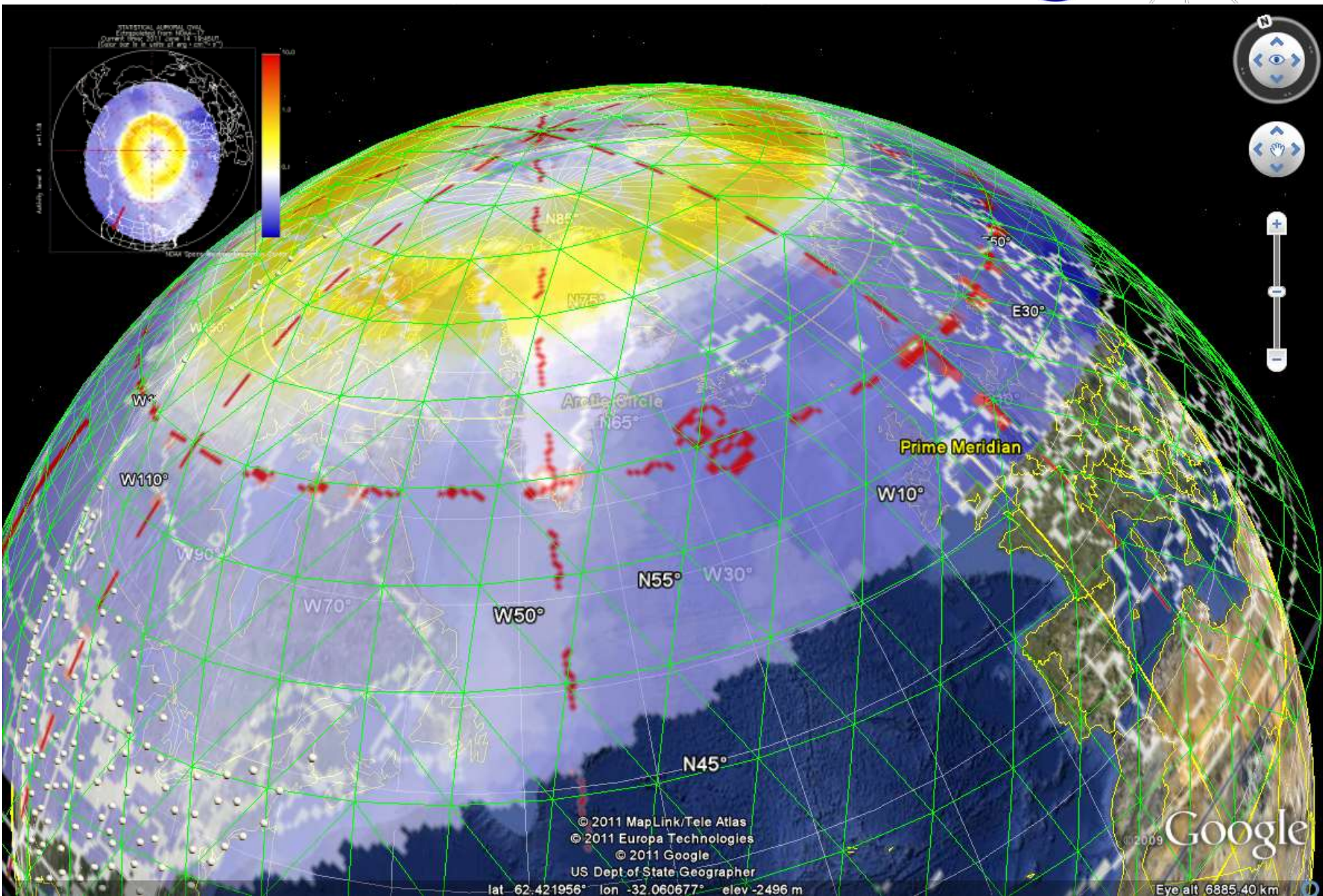


NRL - IASNFS

Cross Sections de Paor!



Space Weather



Game Changers

COLLADA in NASA World Wind Java

"from outer space to in your face"
- Dan Gordon, Autometric

"up in the air, way out in space,
deep down below, all over the place."