The SSEC/CIMSS Web Map Service

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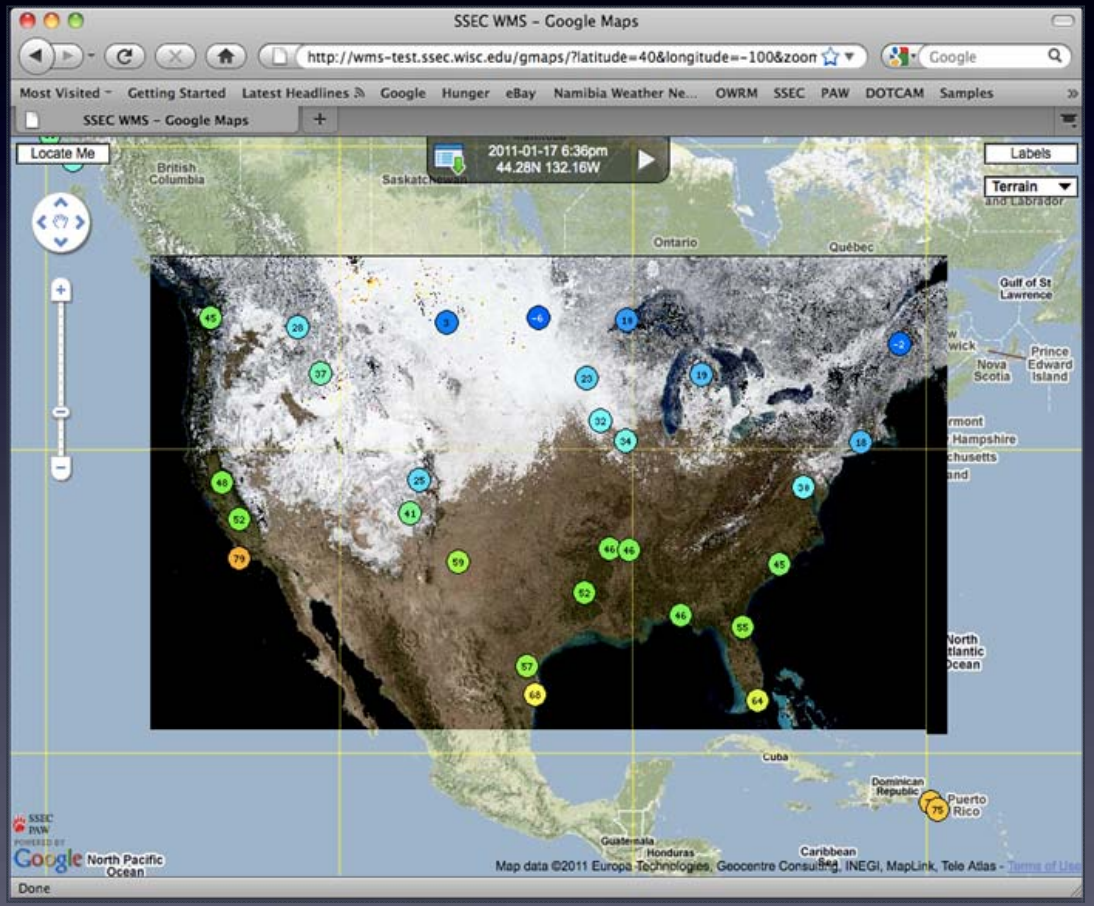
Outline

- Overview
- System architecture
- Example web interfaces
- Example products
- Summary
- Real-Time Demo

Web Map Service

- Open Geospatial Consortium (OGC) standard
- Digital image of geographic information
- URL-based addressing
- **Independent of visualization**

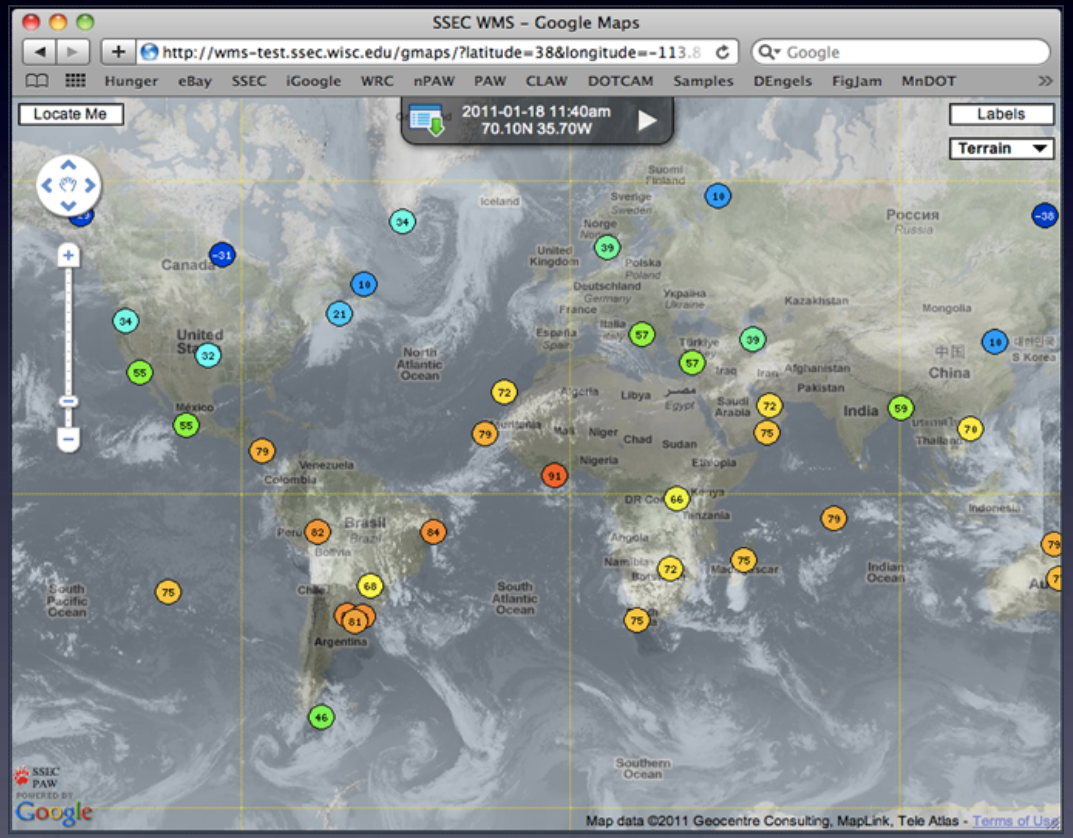


Why use a WMS?

- Open Geospatial Consortium (OGC) compliant Web Service.
- Ingest and process a myriad of data types with different temporal, spatial, and spectral scales and produce a suite of standard outputs.
- The outputs are independent of the client application (web browser, mobile device, Google Earth, etc.).
- The outputs have scalable complexity appropriate for audiences ranging from scientists to forecasters to pilots to policy makers.
- Output composites are easily generated by combining mutiple layers from single or multiple server sources.

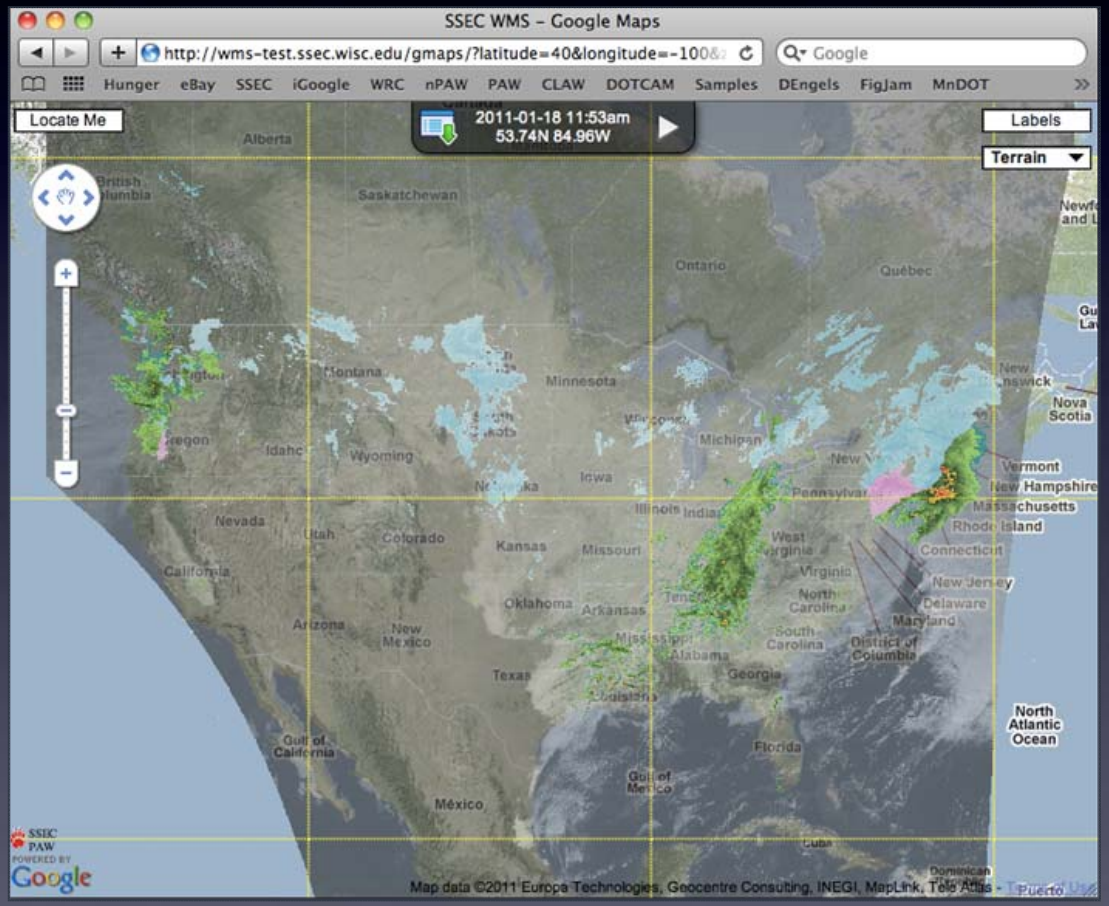
WMS Features

- Dynamic roam and zoom
- Product compositing
- Transparency
- Output is scaled to the display device
- Tile caching



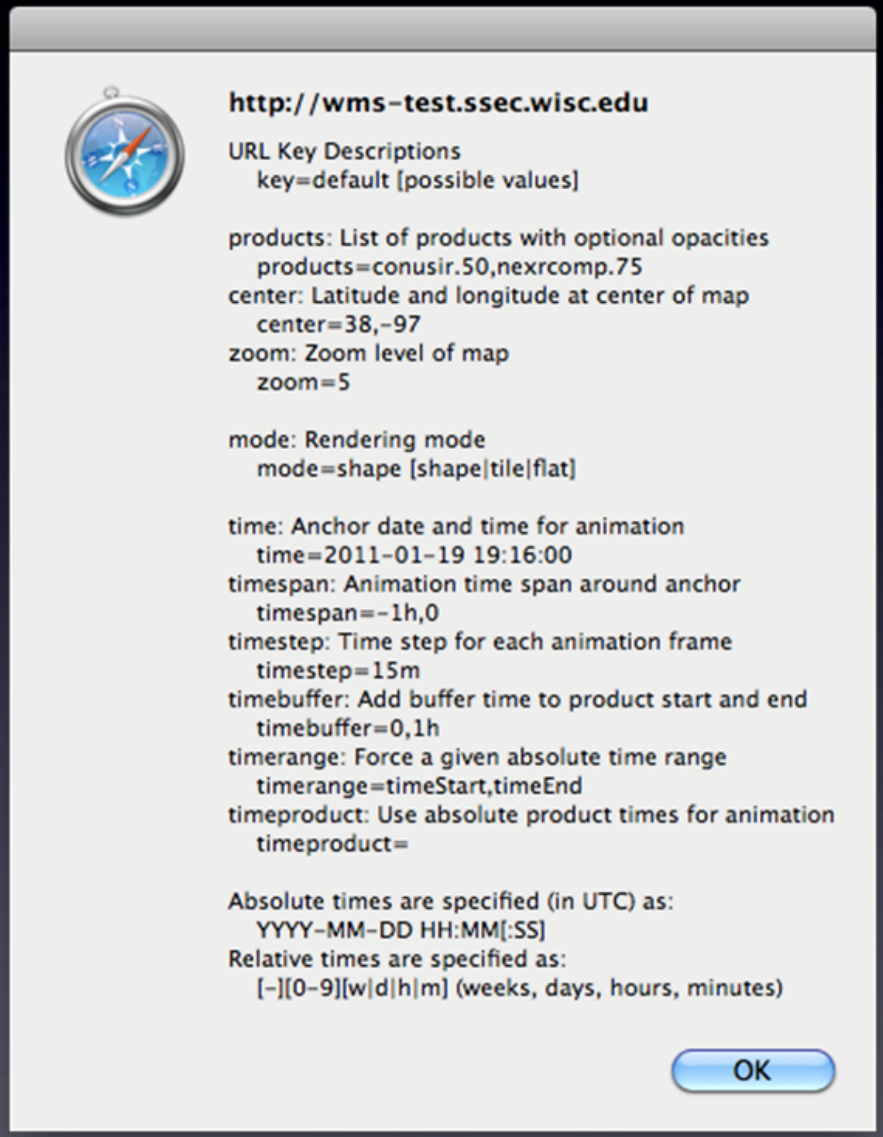
WMS Enhancements

- Animation
- Product Ingest Manager
- Product Interface
- Overlay (polygons, contours, and text)
- Tile pre-caching
- Link to other WMS sites

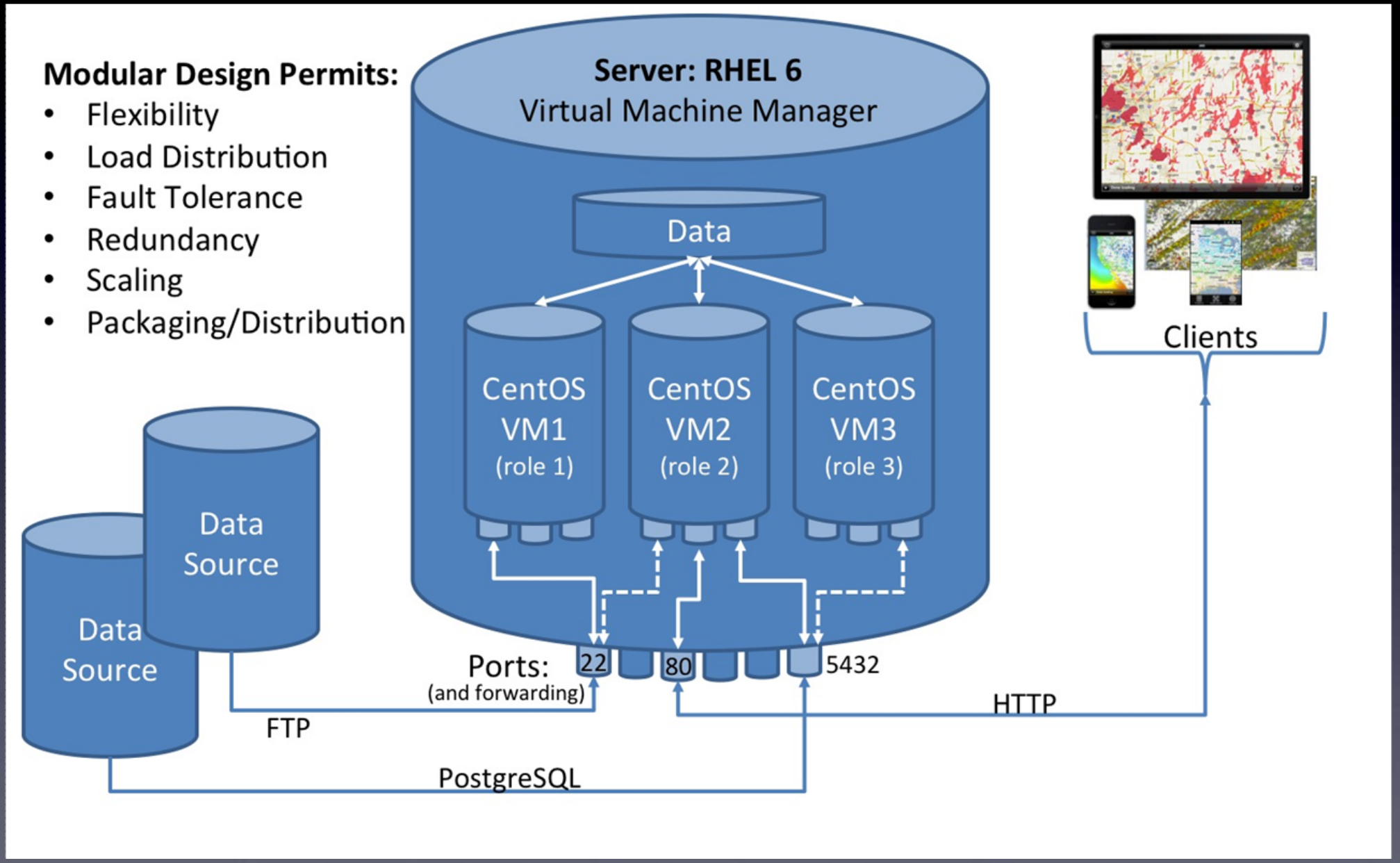


Animation Control

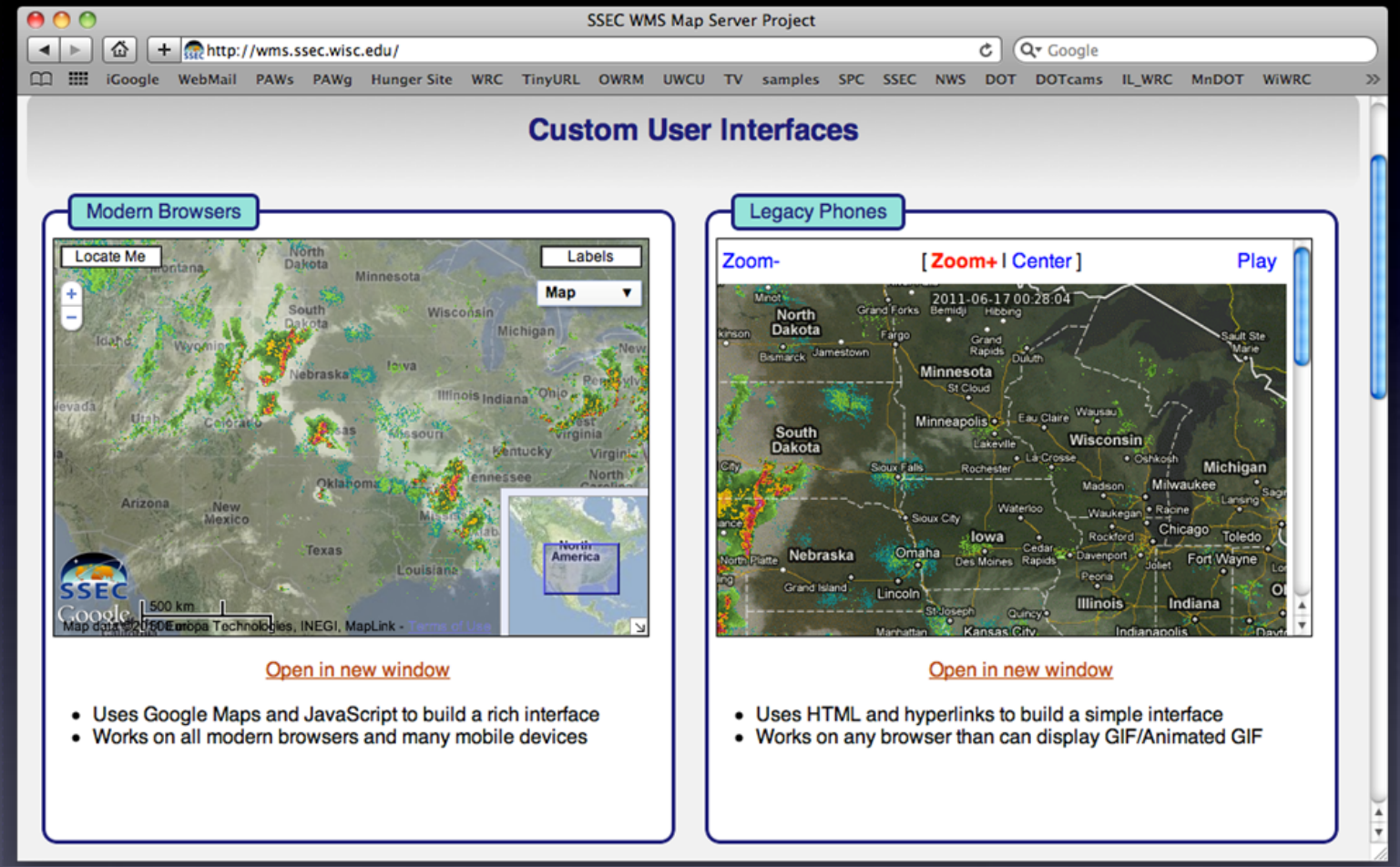
- Adapts to varying temporal resolutions
- Transitions from current to future displays
- Author Configurable loop controls



System Architecture



Web Apps



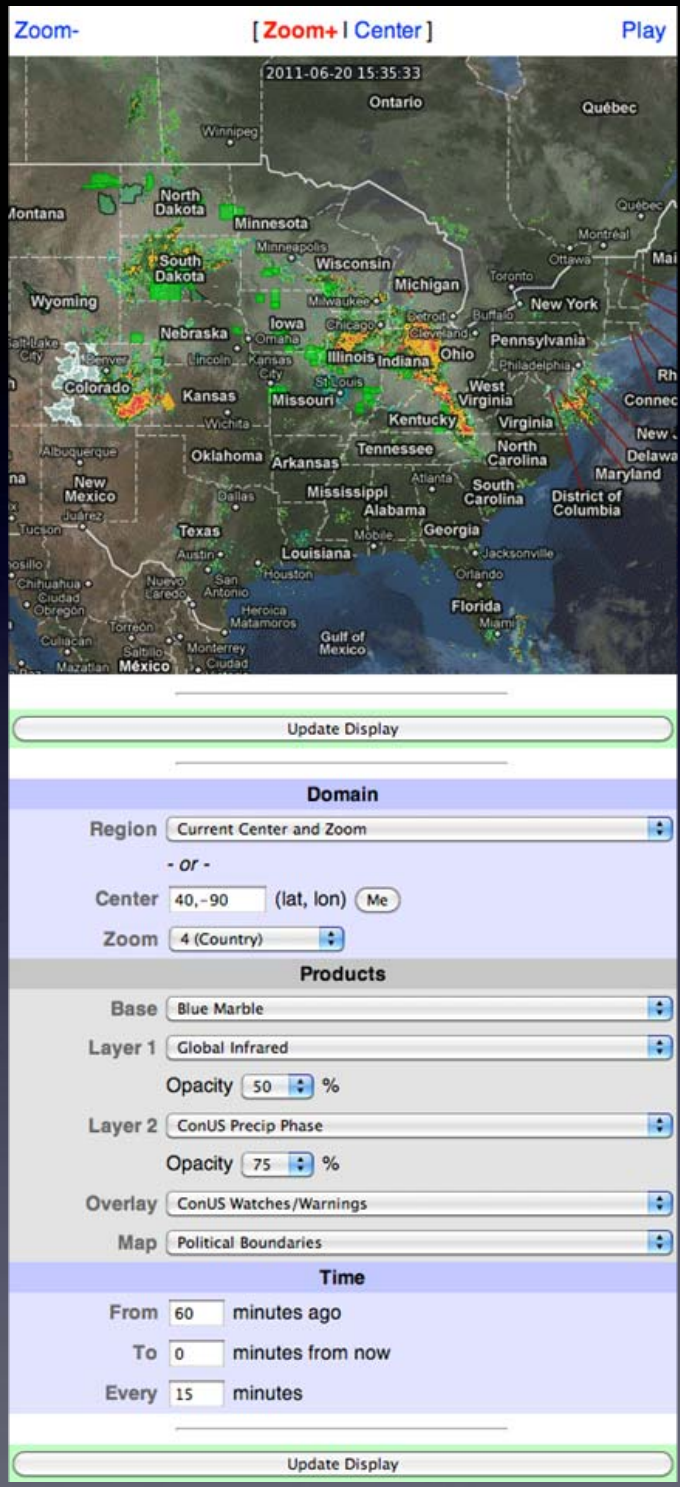
Google Maps

Simple Interface

http://wms.ssec.wisc.edu

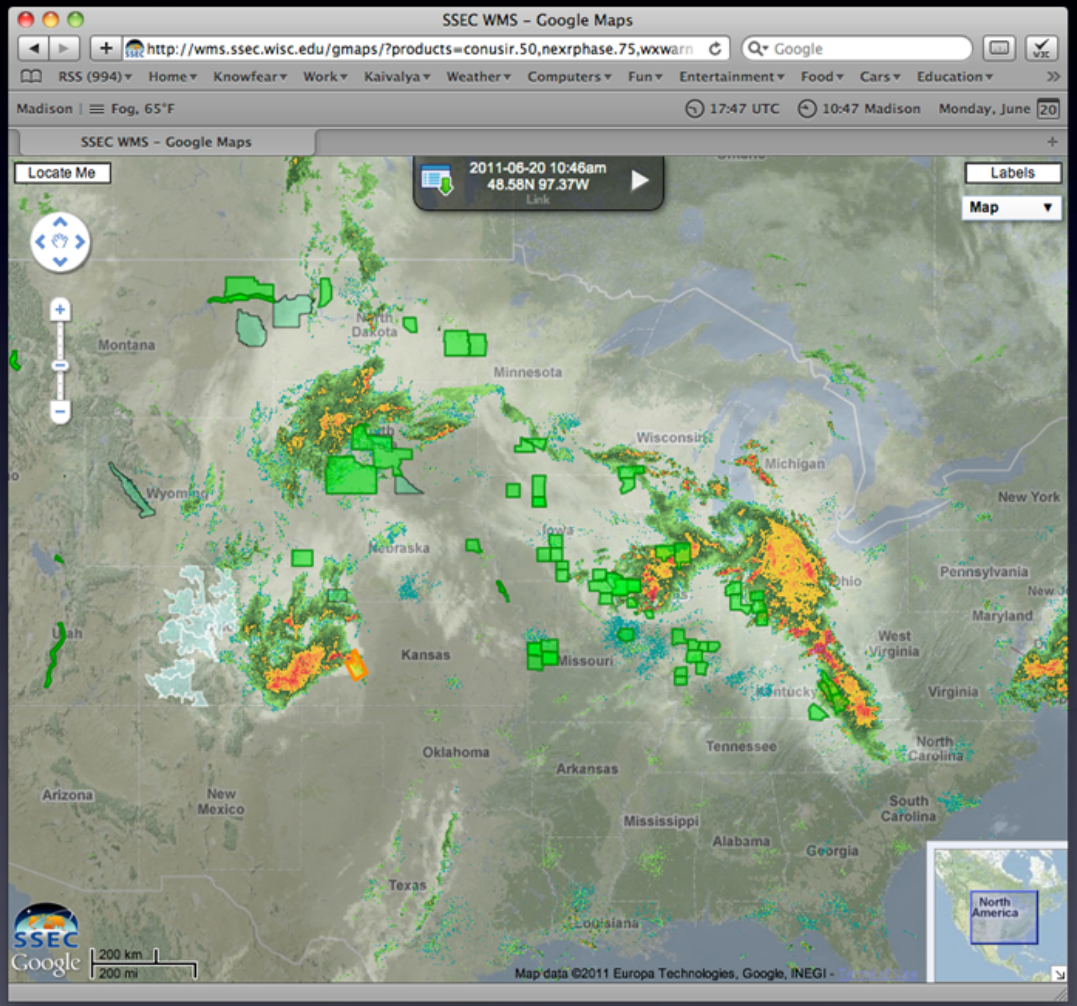
Simple

- GIF or Animated GIF
- No Javascript
- Image is compressed and converted by server
- Works on wide range of clients
- Faster download
- No dynamic zoom, roam or popups



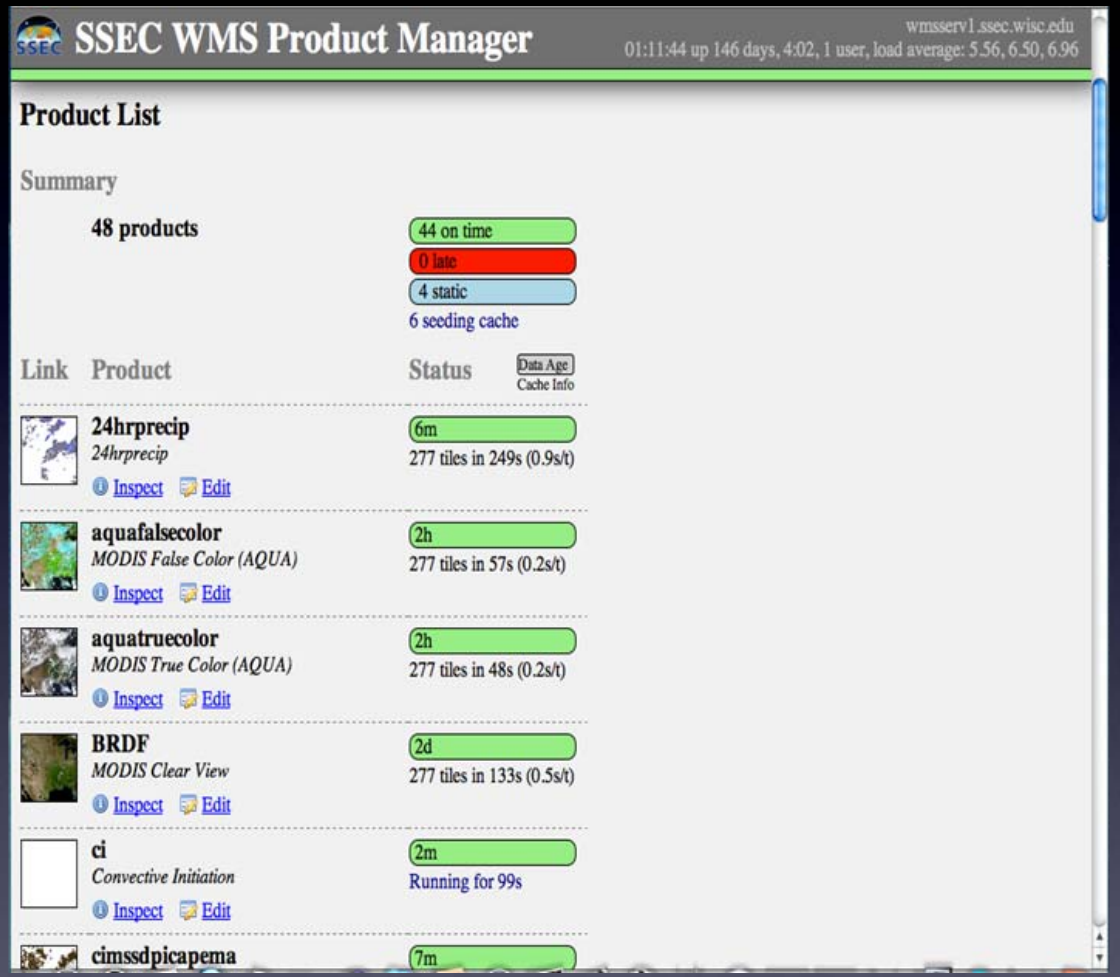
Google Maps

- Manages tiles served from WMS
- Dynamic zoom and roam
- Cached tiles
- Other APIs (Bing, Virtual Earth) are possible



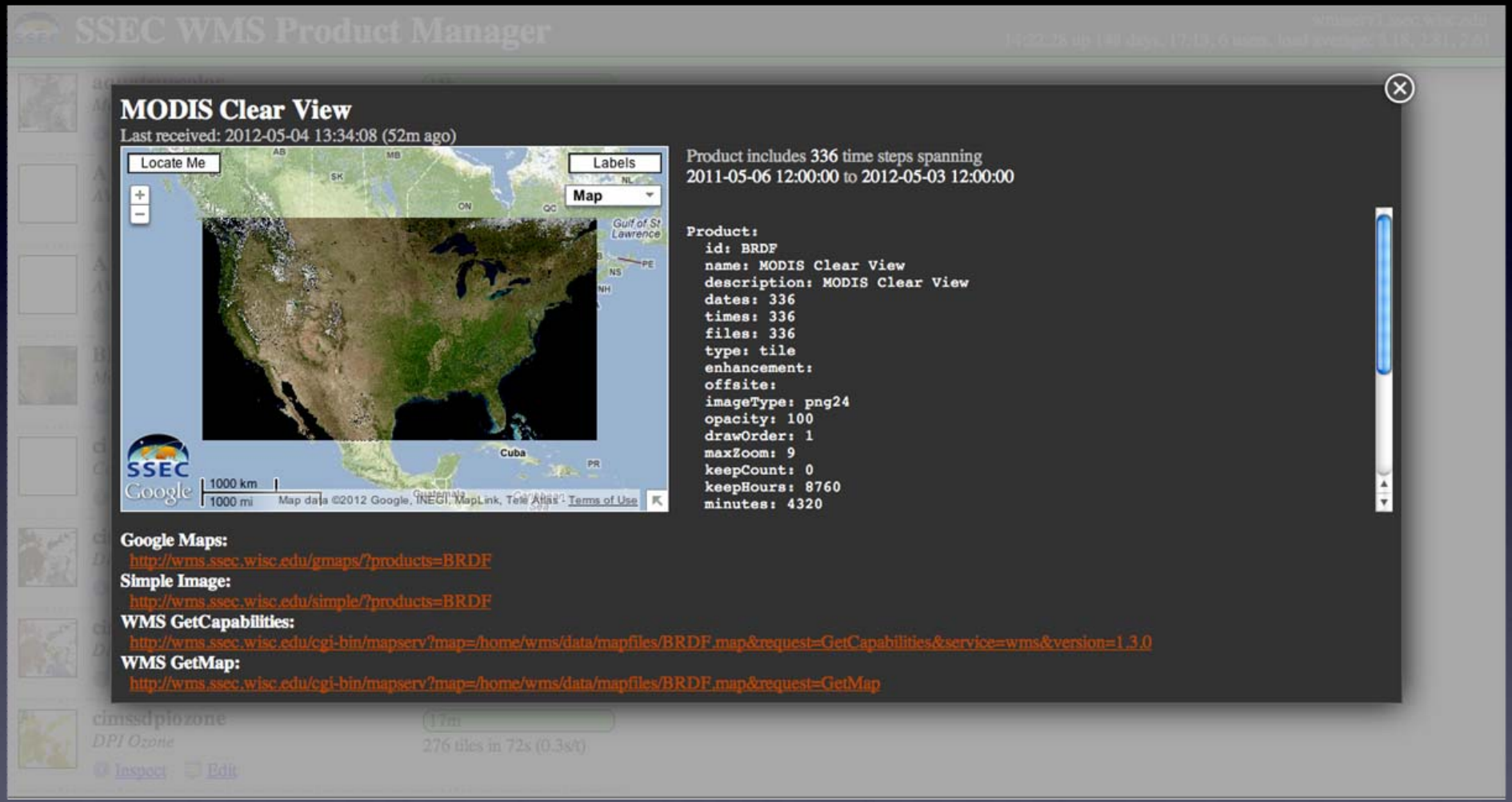
Product Manager

- Lists current released products
- Ingest status of individual products
- Inspection tool



http://wms.ssec.wisc.edu/manager

Product Manager



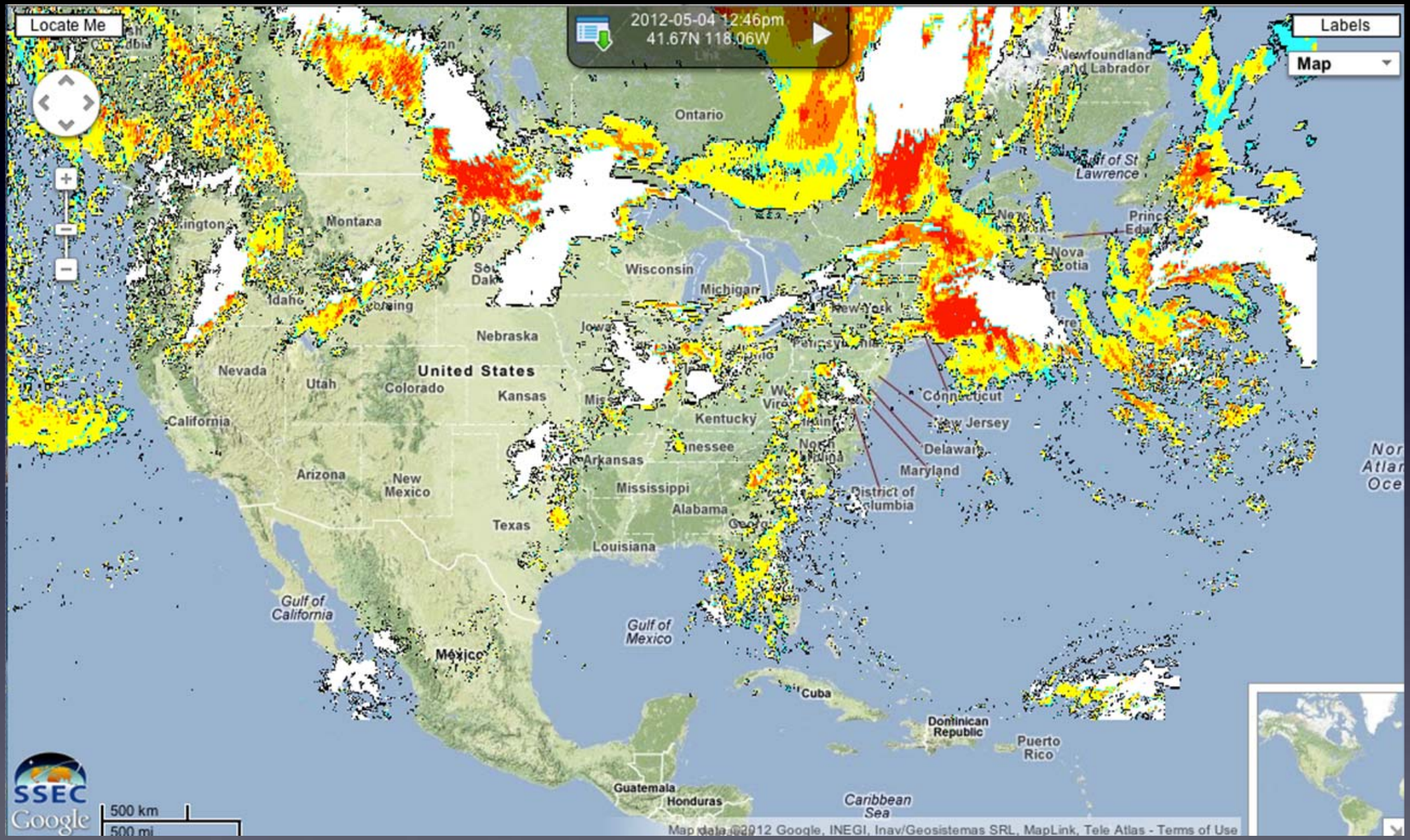
http://wms.ssec.wisc.edu/manager

CIMSS

GOES Sounder Products

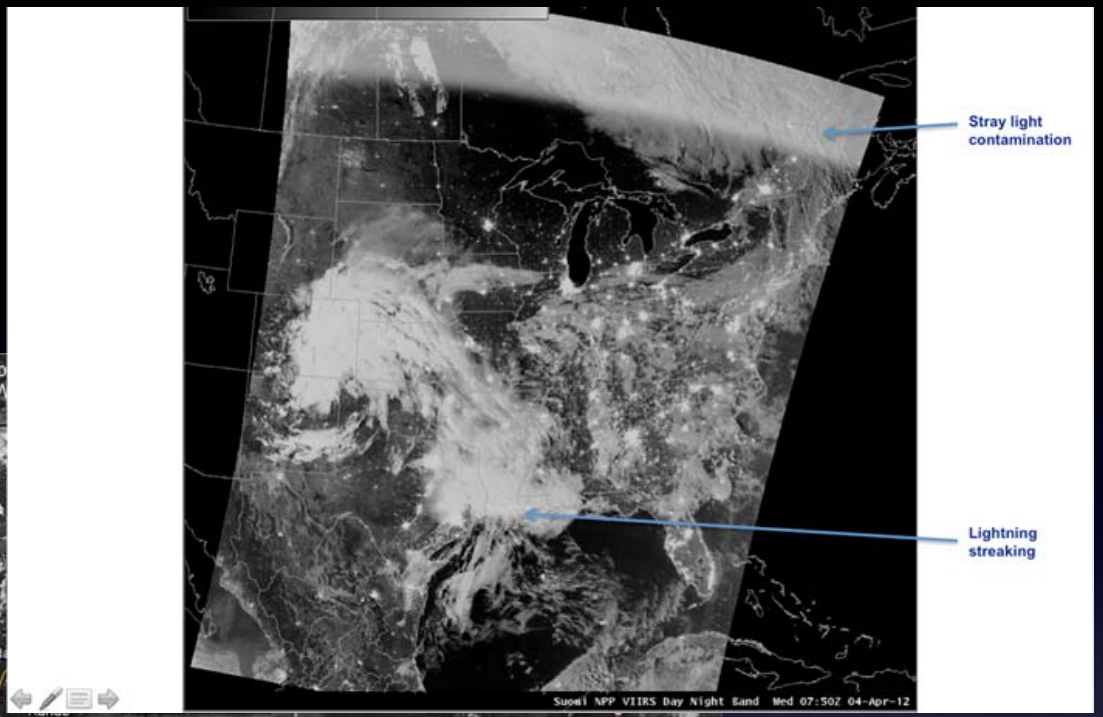
NASA Langley

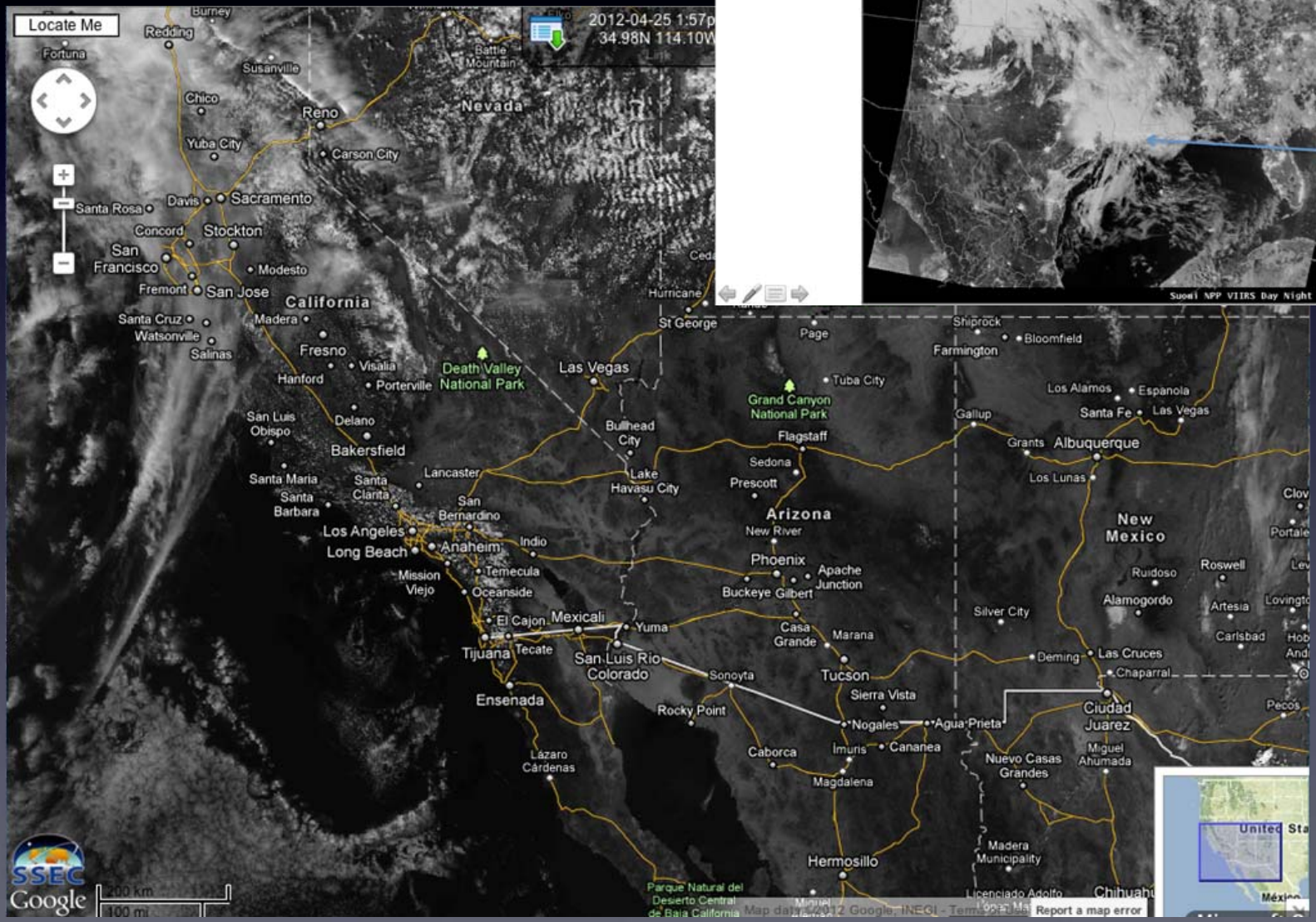
Icing



CSPP

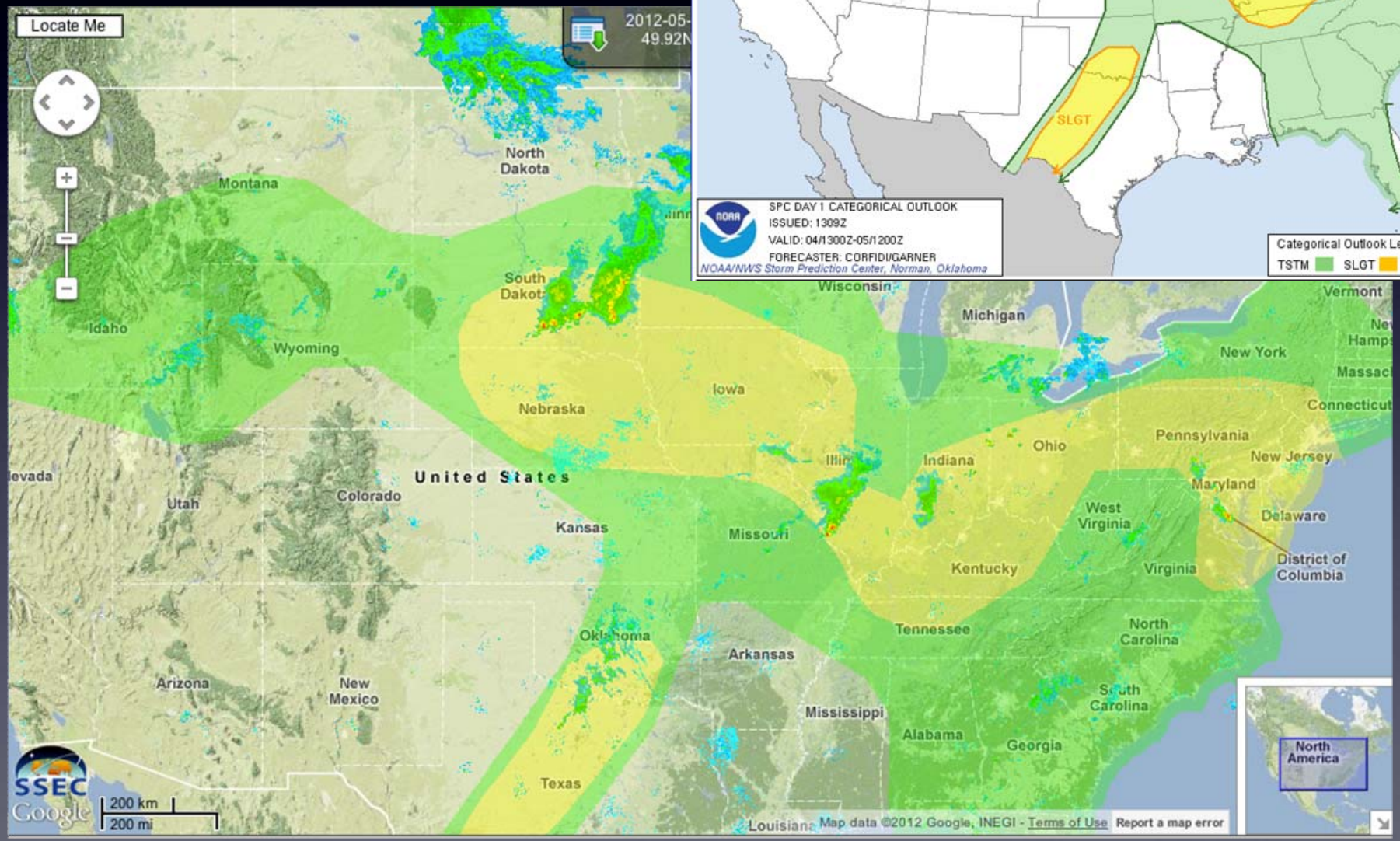
VIIRS Granule Composites

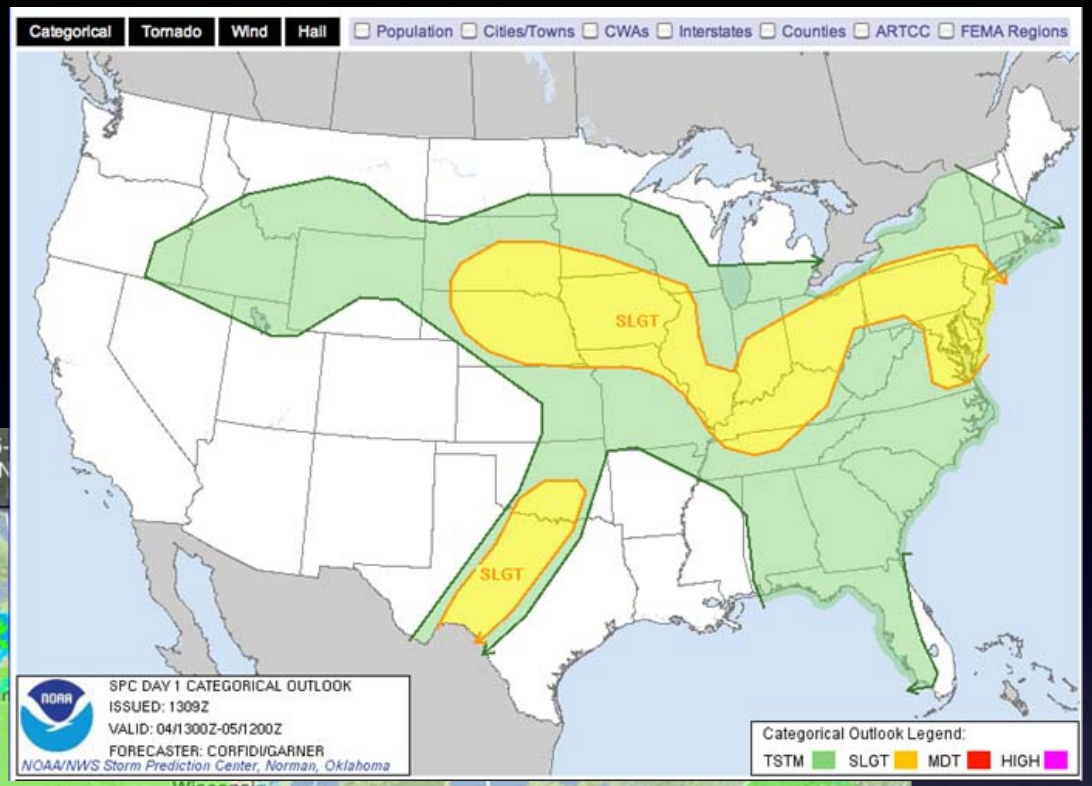




SPC

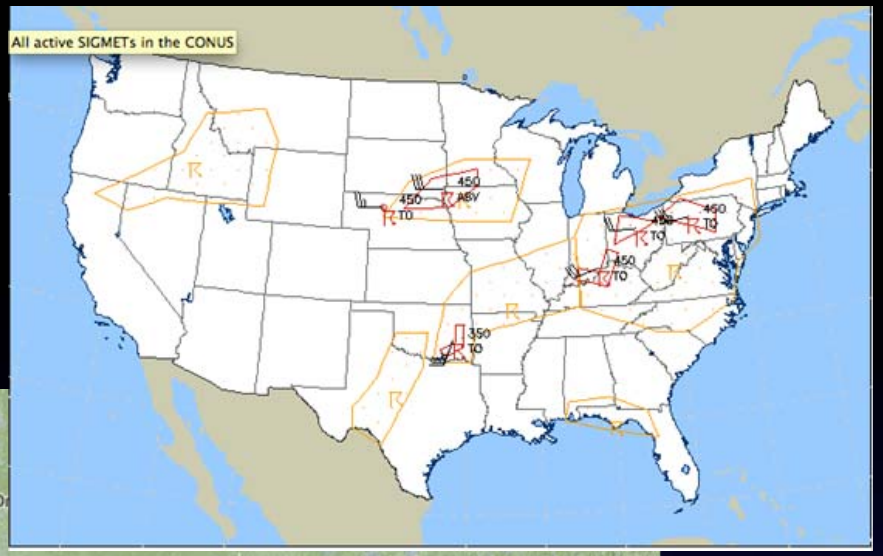
Convective Outlook

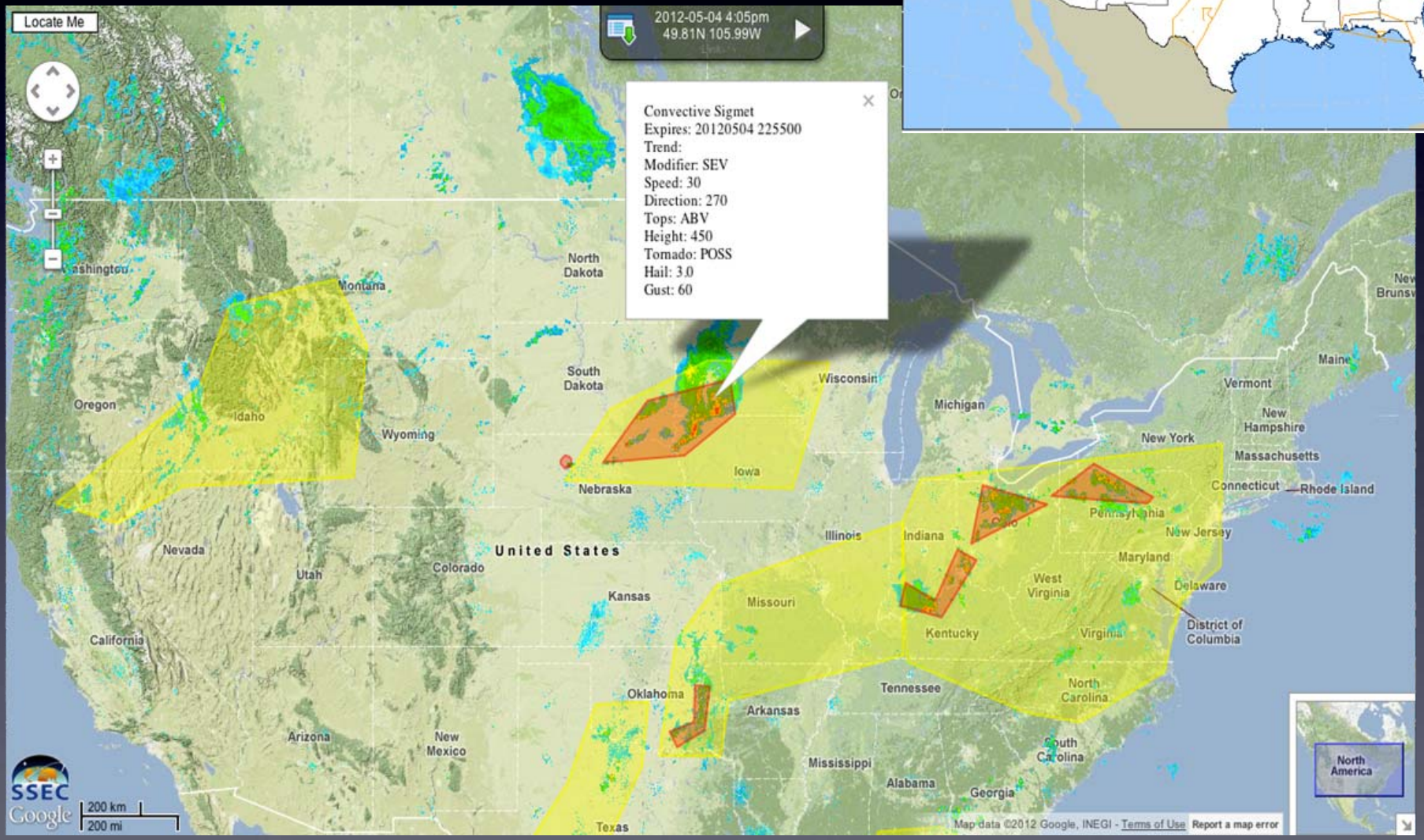




AWC

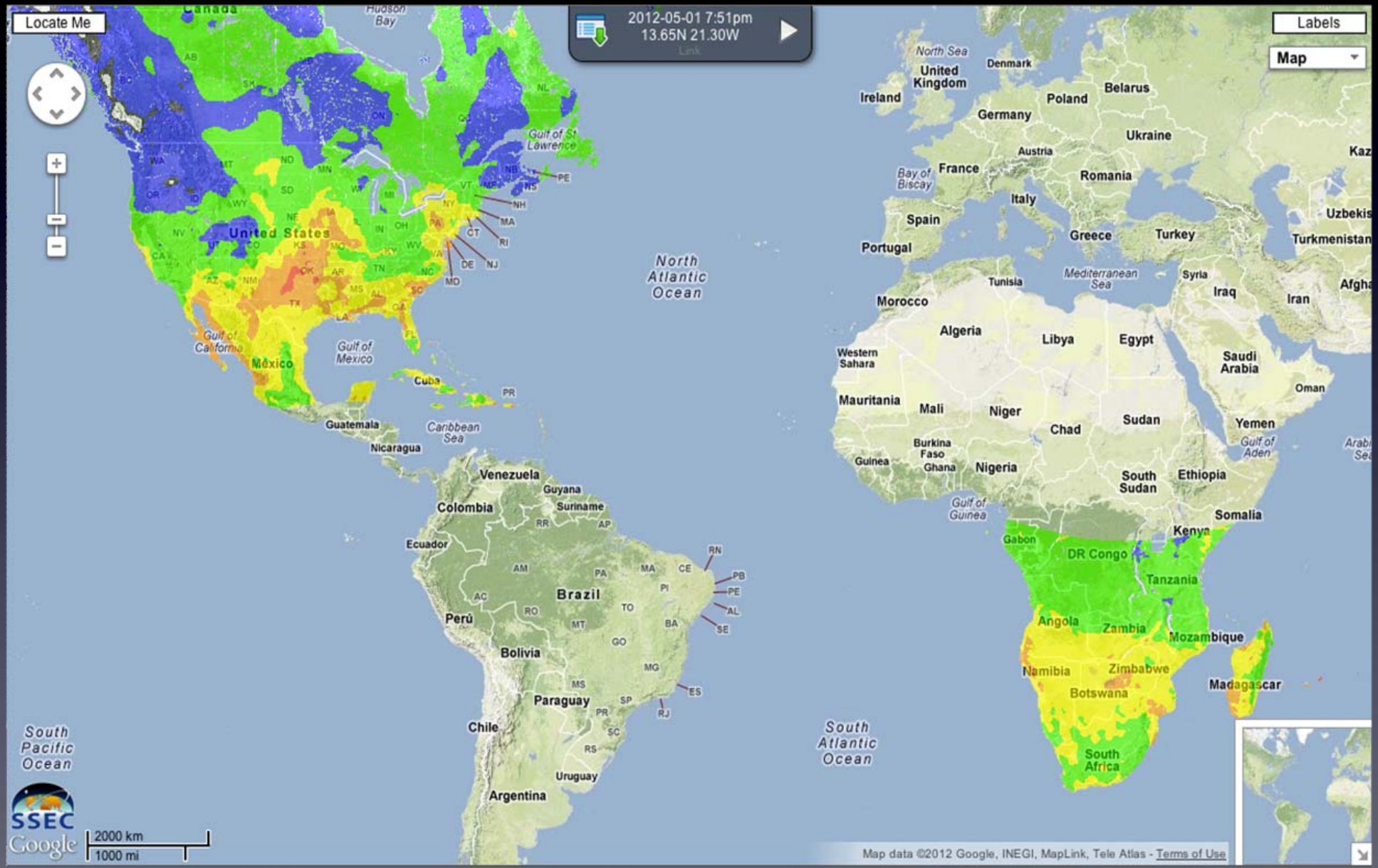
Convective Outlook and SIGMET





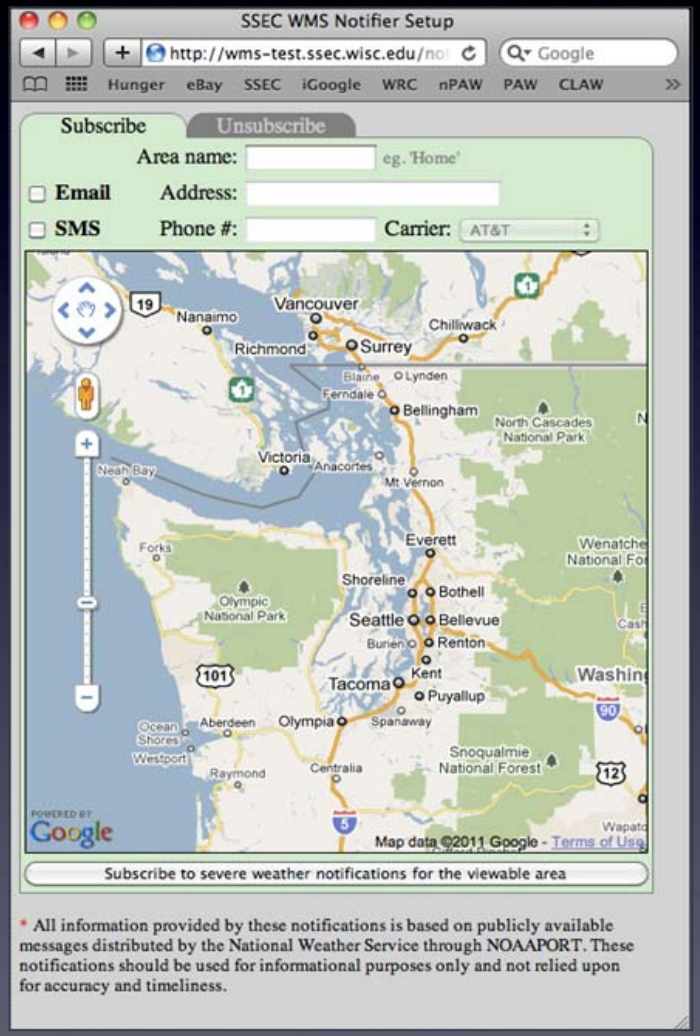
CIMSS

DBCRAS Fire Danger Index

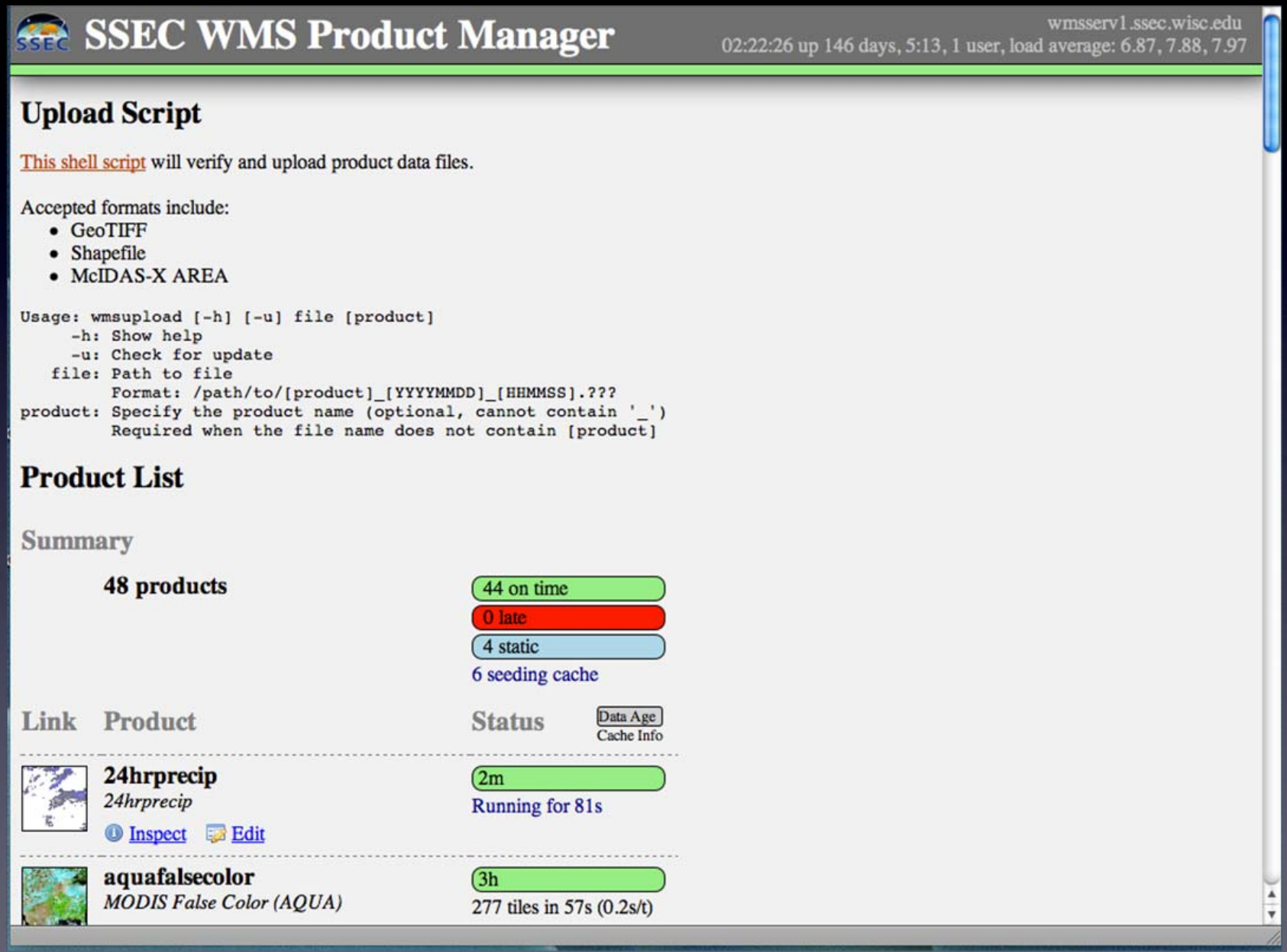


Notification Prototype

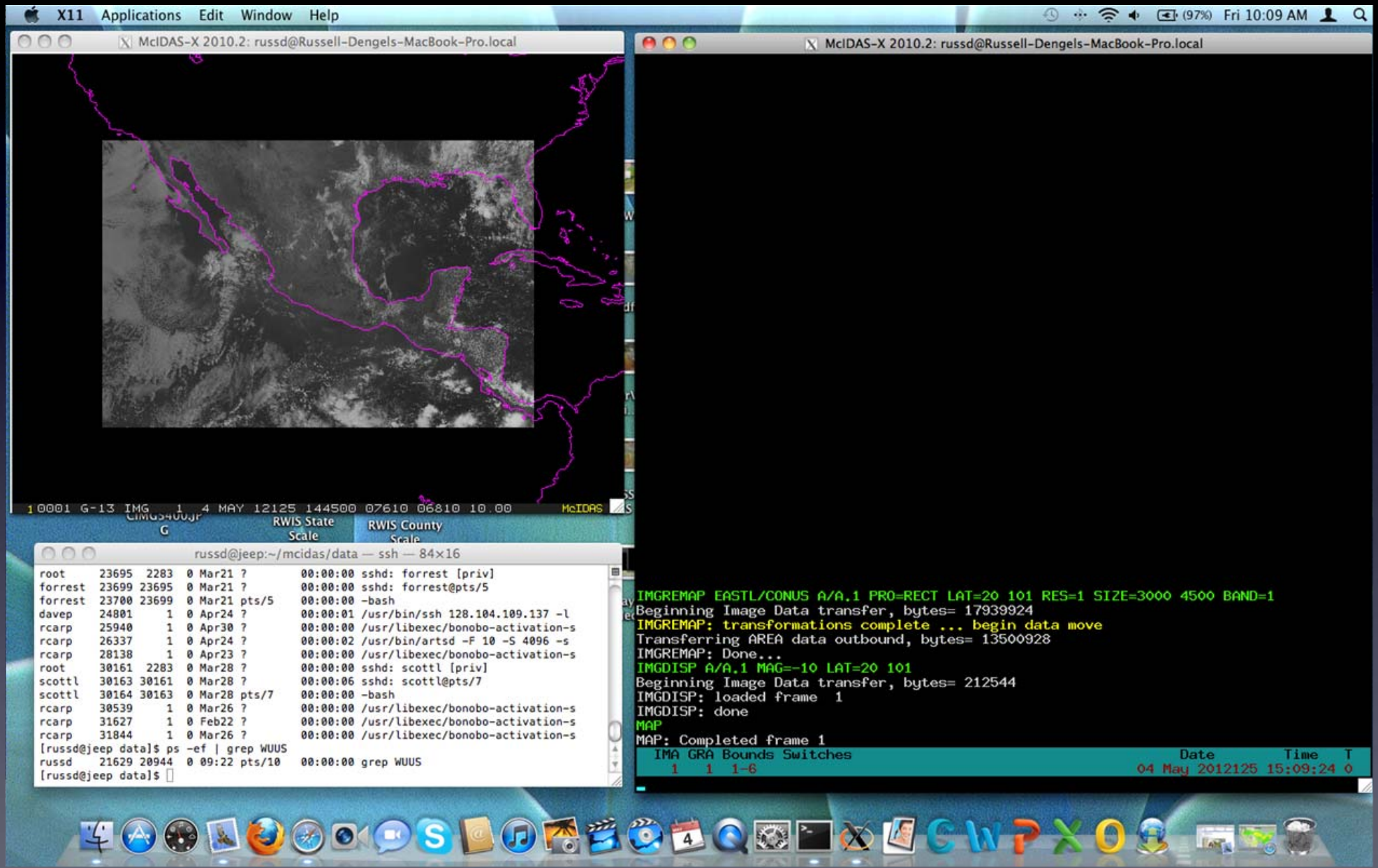
- Email, SMS and iPhone/Android notifications
- Configurable for regions
- GPS user tracking in native apps
- App receives notification which triggers WMS display



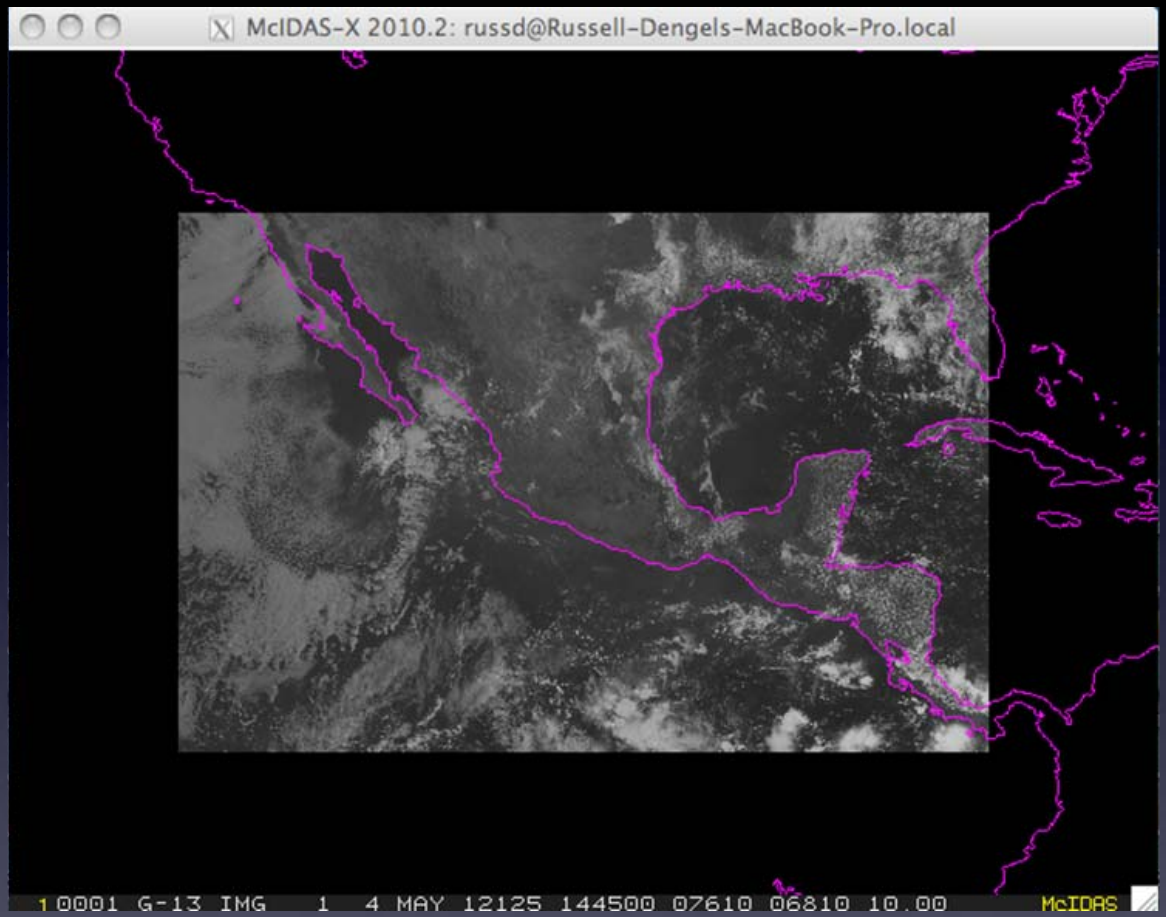
WMSUPLOAD


SSEC WMS Product Manager
wmsserv1.ssec.wisc.edu
02:22:26 up 146 days, 5:13, 1 user, load average: 6.87, 7.88, 7.97
Upload Script
This shell script will verify and upload product data files.
Accepted formats include:
GeoTIFF
Shapefile
McIDAS-X AREA
Usage: wmsupload [-h] [-u] file [product]
-h: Show help
-u: Check for update
file: Path to file
Format: /path/to/[product]_[YYYYMMDD]_[HHMMSS].???
product: Specify the product name (optional, cannot contain '_')
Required when the file name does not contain [product]
Product List
Summary
48 products
44 on time
0 late
4 static
6 seeding cache
Link
Product
Status
Data Age
Cache Info
24hrprecip
24hrprecip
Inspect
Edit
2m
Running for 81s
aquafalsecolor
MODIS False Color (AQUA)
3h
277 tiles in 57s (0.2s/t)

WMSUPLOAD

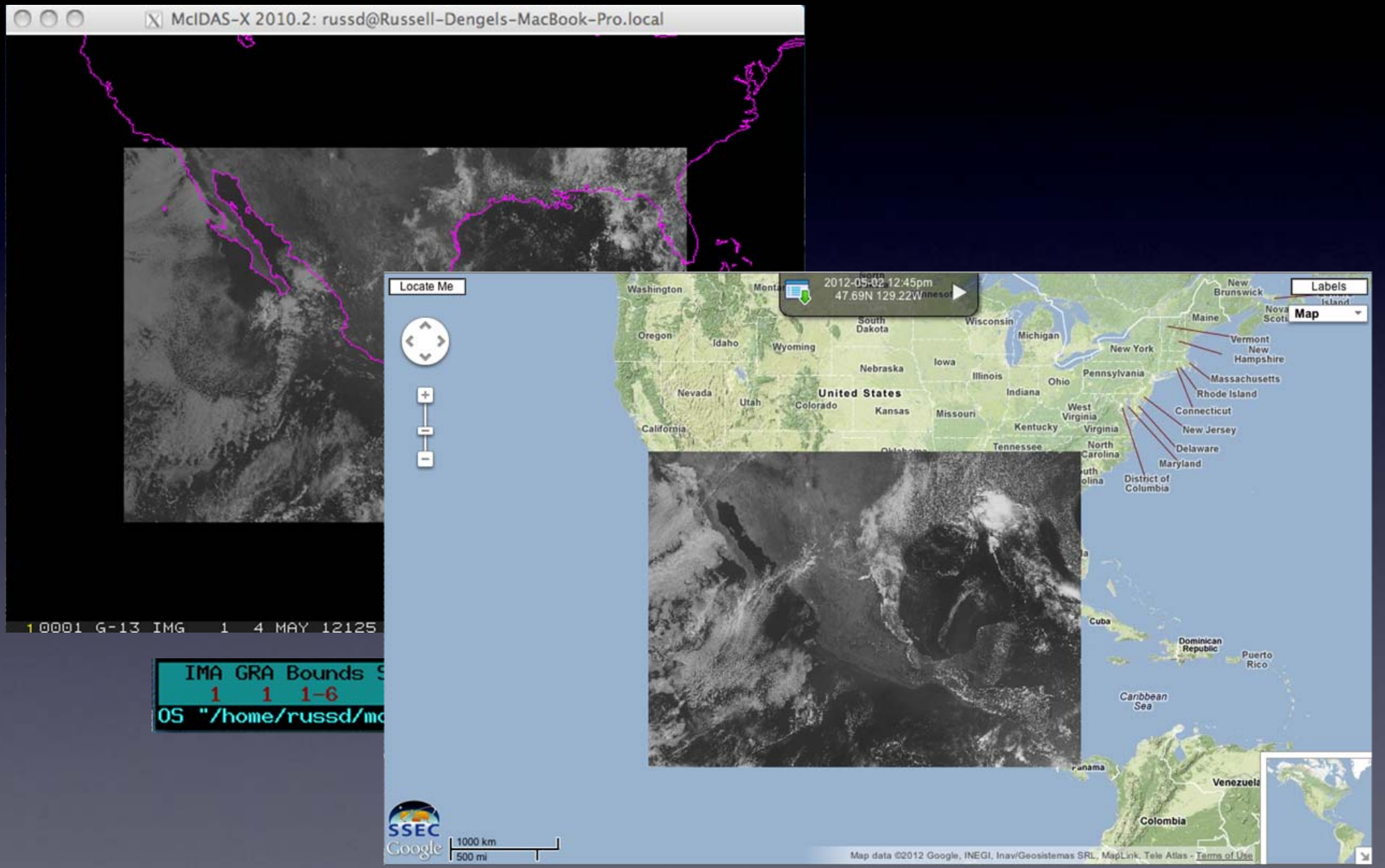

X11 Applications Edit Window Help
(97%) Fri 10:09 AM
McIDAS-X 2010.2: russd@Russell-Dengels-MacBook-Pro.local
1 0001 G-13 IMG 1 4 MAY 12125 144500 07610 06810 10.00 McIDAS
RWIS State Scale
RWIS County Scale
russd@jeep:~/mcidas/data — ssh — 84×16
root 23695 2283 0 Mar21 ? 00:00:00 sshd: forrest [priv]
forrest 23699 23695 0 Mar21 ? 00:00:00 sshd: forrest@pts/5
forrest 23700 23699 0 Mar21 pts/5 00:00:00 -bash
davep 24801 1 0 Apr24 ? 00:00:01 /usr/bin/ssh 128.104.109.137 -l
rcarp 25940 1 0 Apr30 ? 00:00:00 /usr/libexec/bonobo-activation-s
rcarp 26337 1 0 Apr24 ? 00:00:02 /usr/bin/artsd -F 10 -S 4096 -s
rcarp 28138 1 0 Apr23 ? 00:00:00 /usr/libexec/bonobo-activation-s
root 30161 2283 0 Mar28 ? 00:00:00 sshd: scottl [priv]
scottl 30163 30161 0 Mar28 ? 00:00:06 sshd: scottl@pts/7
scottl 30164 30163 0 Mar28 pts/7 00:00:00 -bash
rcarp 30539 1 0 Mar26 ? 00:00:00 /usr/libexec/bonobo-activation-s
rcarp 31627 1 0 Feb22 ? 00:00:00 /usr/libexec/bonobo-activation-s
rcarp 31844 1 0 Mar26 ? 00:00:00 /usr/libexec/bonobo-activation-s
[russd@jeep data]$ ps -ef | grep WUUS
russd 21629 20944 0 09:22 pts/10 00:00:00 grep WUUS
[russd@jeep data]$
McIDAS-X 2010.2: russd@Russell-Dengels-MacBook-Pro.local
IMGREMAP EASTL/CONUS A/A.1 PRO=RECT LAT=20 101 RES=1 SIZE=3000 4500 BAND=1
Beginning Image Data transfer, bytes= 17939924
IMGREMAP: transformations complete ... begin data move
Transferring AREA data outbound, bytes= 13500928
IMGREMAP: Done...
IMGDISP A/A.1 MAG=-10 LAT=20 101
Beginning Image Data transfer, bytes= 212544
IMGDISP: loaded frame 1
IMGDISP: done
MAP
MAP: Completed frame 1
IMA GRA Bounds Switches Date Time T
1 1 1-6 04 May 2012125 15:09:24 0

WMSUPLOAD




```
 IMA GRA Bounds Switches                          Date          Time    T
   1   1  1-6                                  04 May 2012125 15:27:39  0
OS "/home/russd/mcidas/data/wmsupload /home/russd/mcidas/data/AREA0001 MexicoVis
```

WMSUPLOAD


McIDAS-X 2010.2: russd@Russell-Dengels-MacBook-Pro.local
1 0001 G-13 IMG 1 4 MAY 12125
IMA GRA Bounds S
1 1 1-6
OS "/home/russd/mc
Locate Me
2012-05-02 12:45pm
47.69N 129.22W
Labels
Map
Washington
Oregon
Idaho
Wyoming
South Dakota
Wisconsin
Michigan
New York
Maine
Vermont
New Hampshire
Massachusetts
Rhode Island
Connecticut
New Jersey
Delaware
Maryland
District of Columbia
Pennsylvania
Ohio
Indiana
Illinois
Iowa
Nebraska
Nevada
Utah
Colorado
Kansas
Missouri
Kentucky
West Virginia
Virginia
North Carolina
Tennessee
California
United States
Cuba
Dominican Republic
Puerto Rico
Caribbean Sea
Venezuela
Colombia
SSEC
Google
1000 km
500 mi
Map data ©2012 Google, INEGI, Inav/Geosistemas SRL, MapLink, Tele Atlas - Terms of Use

Summary

- A WMS provides flexibility in staging a variety of data products
- A WMS can serve images TO many different clients (desktop browsers, mobile devices, Google Maps, etc.)
- The use of VMs provides flexibility, redundancy, load balancing
- WMS to be installed at NSSL within the next couple of days