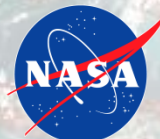# Future Decision Support System Activities

Science Advisory Committee Meeting

26 – 28 August, 2014

National Space Science and Technology Center, Huntsville, AL

Review of Current DSS Activities

- Currently supported
  - AWIPS I
  - NAWIPS
  - Web/KML
- New Platforms
  - AWIPS II
  - AWIPS II National Centers Perspective (NCP)
- Future DSS
  - Open GIS Consortium (OGC) Application
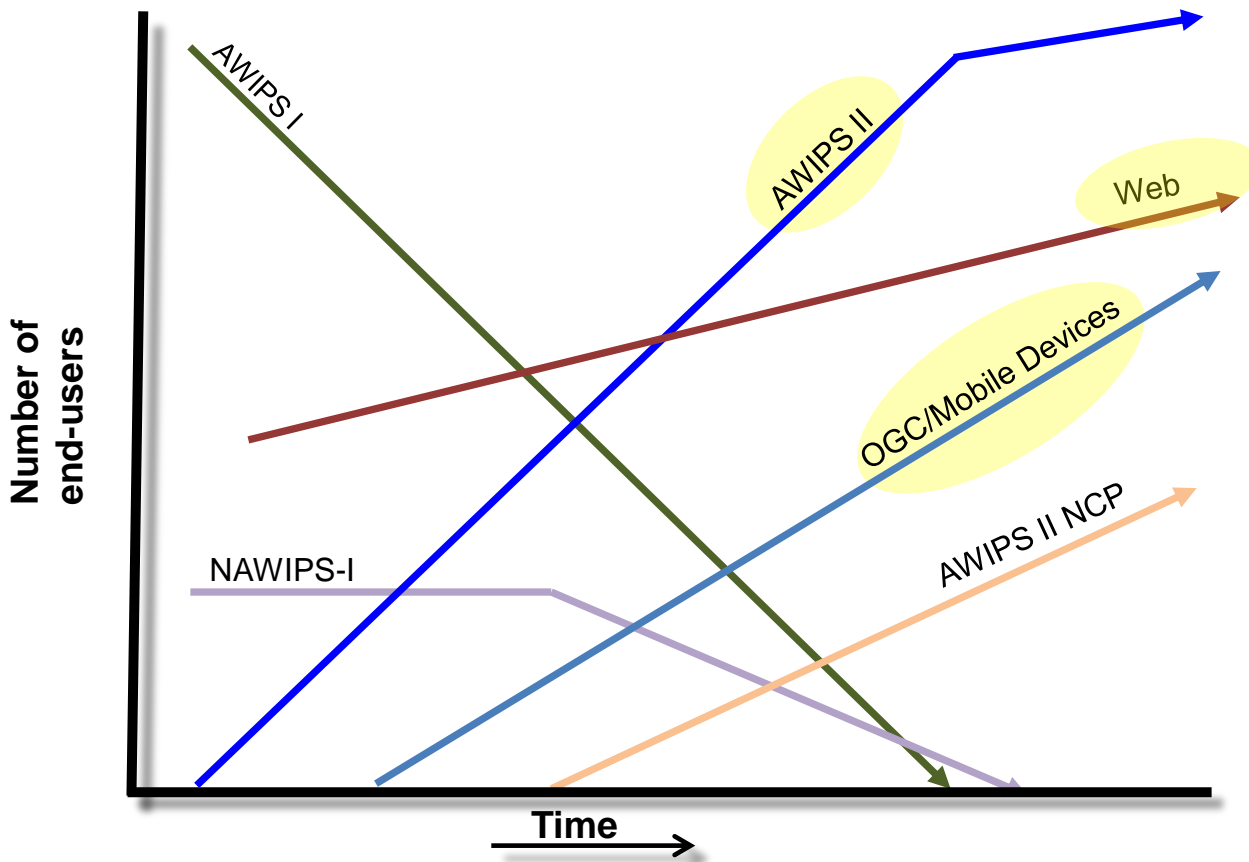 - Mobile Phone

Motivation

- Assess trends in DSS
- Identify potential growth areas
- Use technologies to consolidate data
- We have identified the following platforms to maximize impact:
  - Open GIS Consortium (OGC) systems
  - Mobile Devices
- Development cannot compromise existing end-users
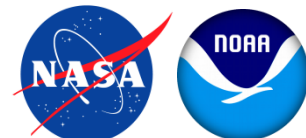
Trends in Support by DSS

AWIPS II DSS Trends

- AWIPS II is extensible, which provides opportunities for:
  - New data
  - New tools
- Explore Data Delivery technology in AWIPS II to deliver products
  - Current delivery of data:
    - Requires "backdoor" method
    - Requires significant end-user bandwidth
    - Causes extra layer of troubleshooting for setup and maintenance
  - Allows subscription
  - Data can be delivered via SBN or AWIPS WAN
  - Extends products to incident meteorologists
 - Goal is to fully use Data Delivery Technology

Open GIS Consortium (OGC)

- Develop Open Standards with Geospatial datasets

- Extends SPoRT data to users that utilize tools such as:
  - ArcGIS
  - Web Mapping Services

- Adhere to OGC Standards
  - Web Mapping Service (WMS)
  - Web Feature Service (WFS)

OGC Enabled Applications

- Many DSS can import OGC standard data
- SPoRT has developed a OGC data service: Web Mapping Service
- End-to-end
  system based on:
  - Standard web architecture
  - Cloud based architecture
- Developed framework for web and mobile device development
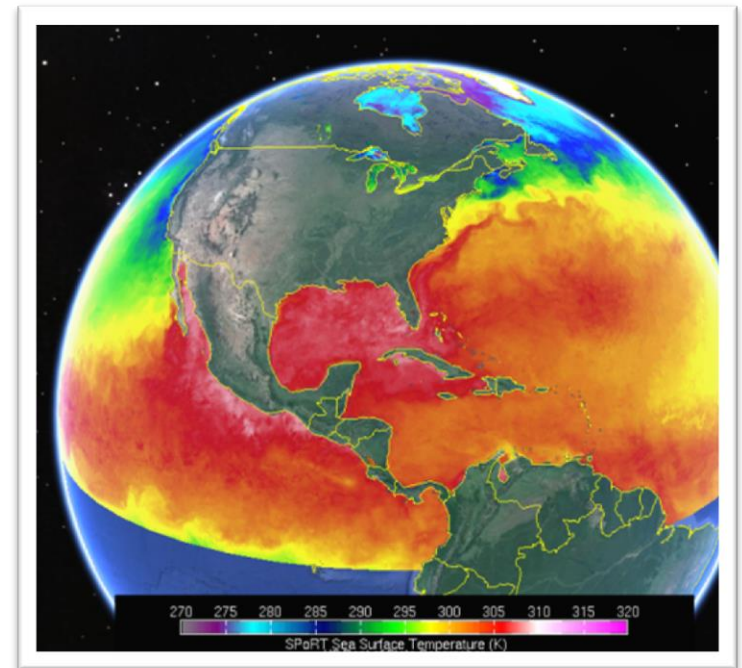
SPoRT SST composite product in OGC compliant viewer

Web Based Data Delivery

- Provide core infrastructure to support web and mobile clients as well as OGC DSS

- Build web displays based on WMS

- Utilize tile caching of the WMS to provide responsive service

WMS   Tilecache
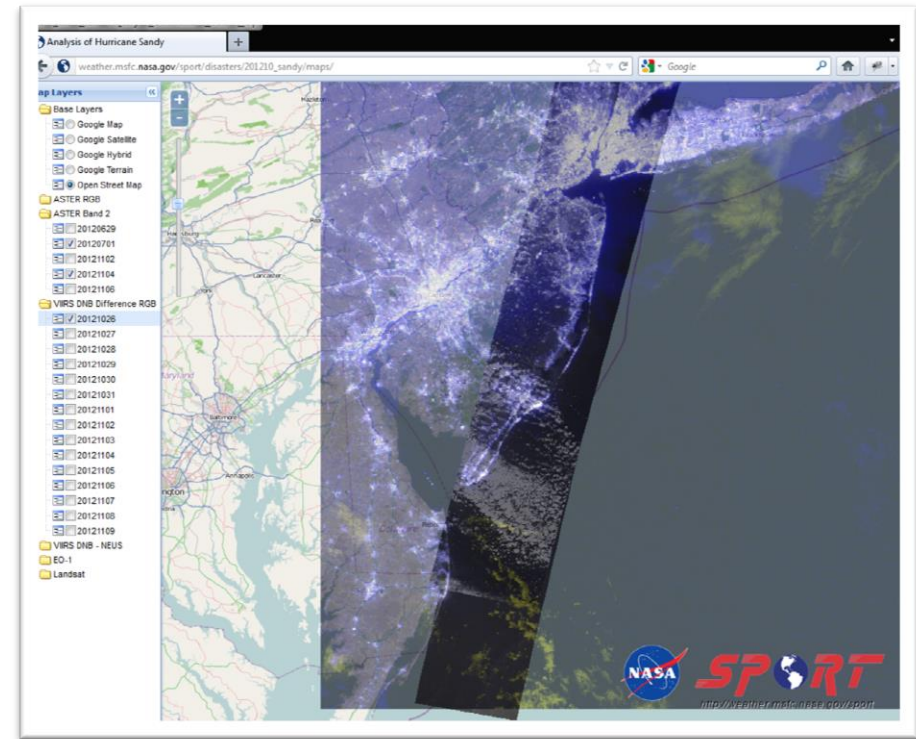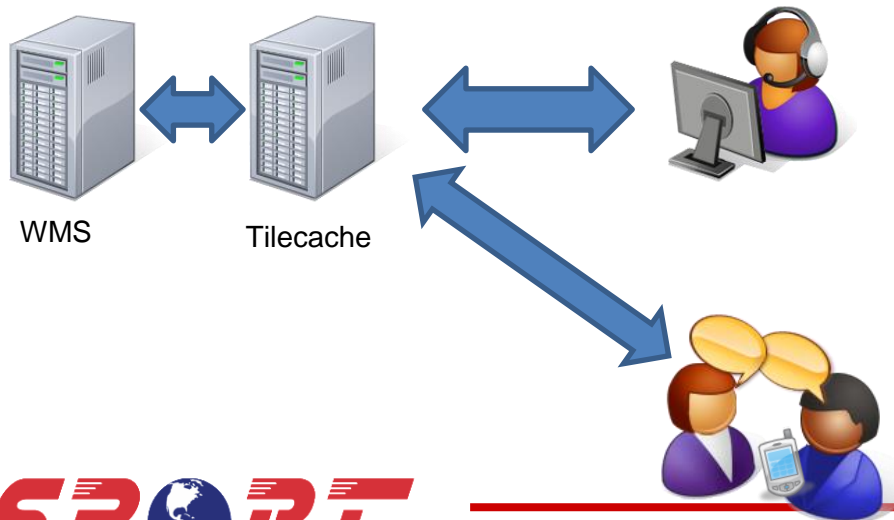
Web viewer of SPoRT Lights Out Product for Super-storm Sandy

Products on WMS

Real-time Data:
- GOES East Imager
    - LWIR
    - VIS
    - WV
- MODIS RGB (Terra and Aqua)
    - True color
    - Airmass
    - Dust
    - Nighttime microphysics
    - False color

Case data
- Landsat 8
    - False
    - True color
- MODIS
    - True color
- VIIRS
    - Day/night band
- ASTER
    - NDVI
- NOAA Blackmarble

Disaster Support:

MODIS		
	True Color	(500 m)
	NDVI	(250 m)
	NDVI Change	(250 m)
VIIRS		
	True Color	(750 m)
	NDVI	(375 m)
	NDVI Change	(375 m)
	DNB Anomaly	(750 m)
ASTER		
	False Color	(15 m)
	NDVI	(15 m)
	NDVI Change	(15 m)
Landsat 7		
	False Color	(30 m)
	NDVI	(30 m)
	NDVI Change	(30 m)
	Panchromatic	(15 m)
Landsat 8		
	False Color	(30 m)
	NDVI	(30 m)
	NDVI Change	(30 m)
	Panchromatic	(15 m)
ISERV		
	True Color	(5 m)
Worldview-1		
	True Color	(1 m)
	Panchromatic	(0.5 m)
Worldview-2		
	True Color	(1 m)
	Panchromatic	(0.5 m)
SPOT-5		
	False Color	(5 m)

http://wms1.nsstc.nasa.gov:8080/geoserver/gwc/service/kml/SPoRT:realtime_modis_conus_aqua_truecolor.png.kml

http://1.usa.gov/1ohRHIB

SPoRT

Summary

- AWIPS II provides potential growth area
- Producing products in OGC standards can help deliver products to new end-users using many applications
- SPoRT has core web mapping infrastructure already in place
- Web and mobile devices represent large opportunity to reach end-users
- More about this in the presentation:
  - Disaster Response: Applications of Web Mapping Service to Mobile Devices

Questions