NWS Product Description Document (PDD) for:

Radar Integrated Display with Geospatial Elements Version 2- RIDGE2

Part 1 - Mission Connection

a. Product Description - The display of radar data on the Internet is a critical piece of the mission of the National Weather Service (NWS). The display of radar typically accounts for nearly forty percent of the daily web traffic and can peak as high as eighty percent during major storms. RIDGE (Radar Integrated Display with Geospatial Elements) was an important step in the evolution of the display of radar on NWS web pages, and introduced a layered approach using geo-referenced graphics interchange format (GIF) images for radar, boundary and topographical data. RIDGE2 improves upon the original RIDGE design by displaying the data in a web “mashup” using a web mapping application-programming interface (API) in combination with more-advanced global information system (GIS) imagery overlays in the form of web mapping services (WMS).

The enhanced view of NWS Doppler radar images allows interactivity with the display providing you with the ability to customize the way you "look" at weather. The radar image can be layered with geospatial elements such as topography maps, highways, state/county boundaries and weather warnings.

The primary radar display layer is now a national mosaic. By using the national mosaic, redundant radar coverage for many areas will help to fill in any “gaps” of coverage that may occur when any radar is down for maintenance. The user is no longer greeted with “No Radar Data are Available for this Area" message when viewing the RIDGE2 page.

Advantages of RIDGE2 include:

- Radar data is available for GIS programs
- Map backgrounds now provided by Google
- Warnings (Long Fuse and Polygon available)

- Individual radar images that change often are much smaller in file size (compared to the current (RIDGE 1) version)
- Overlays can be toggled on/off and settings are preserved when bookmarked or moving between adjacent radar locations

Disadvantages of RIDGE 2 include:

- Takes more system resources (local machine)
- Larger GIS Images (Due to Higher Resolution Images)

b. Purpose - The NOAA Policy on Partnerships in the Provision of Environmental Information states that NOAA will make its data and products available in internet-accessible, vendor-neutral form. Information will comply with recognized standards, formats, and metadata descriptions to ensure data from different observing platforms, databases, and models can be integrated and used by all interested parties

Radar images provide potentially life-saving information to the public in a more efficient manner. The greater temporal and spatial resolution of RIDGE II will aid both NWS Partners and the general public in time-sensitive decisions related to thunderstorms, and ultimately provide greater safety for the United States public.

c. Audience - This service is intended to meet a wide range of needs of the general public, emergency managers, electronic media, NOAA, and other federal, state, and local government agencies. Any person with Internet access and a need to view weather radar information will have the ability to utilize this product.

d. Presentation Format - The images are provided by WMS, an Open Geospatial Consortium GIS format. These images are overlaid on a Google Maps background via the Google Maps API (Javascript). On the webpage, the user can select which overlays are displayed through the use of check boxes located below the map.

Part II - Technical Description

a. Format and Science Basis - . The RIDGE2 web page is a “mashup” of GIS data layers (radar and NWS hazard data) displayed on top of Google™ base maps using the Google Maps Javascript API. This “mashup” decreases the bandwidth requirement for the NWS web servers as the base map data is served from Google™ and not from the NWS web servers.

This web service is Section 508 and DOC security compliant.

b. Product Availability - This service will be available 24 hours/day, seven days a week by visiting the website http://www.srh.noaa.gov/ridge2/ and http://ridgewms.srh.noaa.gov/ridge2/ . All radars (including NEXRAD and Terminal Doppler Weather Radars (TDWR)) and polygon warning layers are currently available.

The following products are available from the Mosaic radars:

- Base Reflectivity (256 Levels)
- Composite Reflectivity
- Echo Tops

The following products are available from individual WSR-88D radars:

- Digital Hydrometer Classification
- High Resolution Base Reflectivity
- Base Reflectivity
- Storm Relative Mean Radial Velocity
- High Resolution Radial Velocity
- Differential Reflectivity
- 1 hr. Accumulation
- Composite Reflectivity
- Echo Tops

For individual TDWR Radars the following products are available:

- 1 hr. Accumulation
- Composite Reflectivity
- Echo Tops
- Storm Total Accumulation
- Base Reflectivity
- Base Radial Velocity
- Long Range Reflectivity

c. Additional Information - Technical questions regarding this experimental web service may be addressed to:

Paul Kirkwood
NOAA/NWS/SRH
819 Taylor Street, RM10E09
Fort Worth,TX 76102-6171
E-mail: Paul.Kirkwood@noaa.gov

Corey Pieper
NOAA/NWS/SRH
819 Taylor Street, RM10E09
Fort Worth,TX 76102-6171
E-mail: Corey.Pieper@noaa.gov

Policy questions regarding this experimental web service may be addressed to:

John Ferree
NOAA/NWS/OCWWS
120 David L. Boren Blvd., Suite 2300
Norman, OK 73072-7268
E-mail: John.T.Ferree@noaa.gov