

Radar Integrated Display with Geospatial Elements Version 2 RIDGE II
Product Description Document (PDD)
June 2020

Part 1 – Mission Connection

1. Product / Service Description:

Publicly accessible radar data available on the Internet is a vital part of the mission of the National Weather Service (NWS). The first version of this type of publicly available online radar data was RIDGE (Radar Integrated Display with Geospatial Elements), <https://radar.weather.gov/>. This first version of RIDGE was an important step in the evolution of the display of radar on public NWS webpages in the early 2000s. RIDGE introduced a layered approach using geo-referenced tagged image file format (TIF/TIFF) images for radar, geopolitical boundaries and topography. The second version of RIDGE (RIDGE II) has improved upon the original RIDGE design by allowing the user to determine their desired background map layers, data layers, and zoom-level. This is accomplished by removing Adobe FLASH and using HTML5 and javascript in combination with more-advanced geographic information system (GIS) imagery overlays in the form of web mapping services (WMS) that is also mobile-friendly.

RIDGE II provides enhanced features for viewing radar products from the NEXRAD Weather Surveillance Radar 1988 (WSR-88D) network of radars and FAA Terminal Doppler Weather Radars (TDWR) with customized data layer options in addition to what was allowed with RIDGE I, such as an overlay of active NWS hazardous weather watches, warnings, and advisories.

The default radar display layer for RIDGE II is a national mosaic. A radar national mosaic allows for redundant areal coverage for many areas, potentially filling in coverage gaps at times when a particular radar is offline for maintenance. With the RIDGE II webpage, users will no longer see the “No Radar Data is Available for this Area” notification when a radar is offline. Additionally, the expansive national view on the RIDGE II webpage provides the ability to zoom-in, zoom-out, and also localize to a particular radar on the same map, removing the need for individual web pages dedicated to each individual WSR-88D Radar (ex. <https://radar.weather.gov/radar.php?rid=aaa>; where ‘aaa’ is the 3-letter identifier of the radar). These individual webpages will be discontinued late in 2020. Users who have browser-based bookmarks, favorites, or other dedicated links to these pages will be able to reestablish these to their radar(s) of choice in RIDGE II.

Advantages of RIDGE II include:

- Adaptable Web Interface (will work on any screen resolution) / Full Screen Mode
- Radar data is available for Open Geospatial Consortium (OGC) compliant GIS programs (reduces, clipped to viewer domain)
- Map backgrounds now provided by Google™ and/or ESRI™
- NWS watches, warnings, and advisory areas (Zone, County, and Polygon-based)
- Individual radar images that change often are much smaller in file size
- Overlays can be toggled on/off and settings are preserved when bookmarked or moving between adjacent radar locations
- OGC Web Map Services (WMS) available for all data provided

Disadvantages of RIDGE II include:

- Takes more system resources (local overlays)
- Larger geoTIF Images (for download)

2. Purpose/Intended Use:

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 data provides potentially life-saving and economically-beneficial information to the public. RIDGE II provides this data with greater temporal and spatial resolution, especially for time-sensitive decision-making activities related to convective weather threats, heavy rainfall threats, and other extreme weather to ultimately provide greater overall weather-related safety for the United States public.

3. 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 desire to view weather radar information will have the ability to utilize this product.

4. Presentation Format:

The images are provided by WMS, an Open Geospatial Consortium GIS format. These images are overlaid on a Google™ and/or ESRI™ map background. On the webpage, the user can select which overlays are displayed through the use of check boxes located below the map.

5. Feedback Method:

NWS is soliciting comments and feedback through July 29, 2020 on the proposed implementation of Ridge II.

Technical questions regarding this web service may be addressed to:

IDP GIS Support Team
NOAA/NWS/IDP
1325 East-West Hwy, SSMC2, Silver Spring, MD 20910
E-mail: idp.gis.support@noaa.gov

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

Greg Schoor
NOAA/NWS/AFS Severe Weather Program
120 David L. Boren Blvd., Suite 2312 Norman, OK 73072-7268

E-mail: Gregory.M.Schoor@noaa.gov

Part 2 – Technical

1. Format and Science Basis:

The RIDGE II web page is a mashup of GIS data layers (radar and NWS hazard data) displayed on top of NWS Enterprise Mapping Services (Google™ and/or ESRI™). This mashup decreases the bandwidth requirement for the NWS web servers as the base map data is served from Google™ and/or ESRI™ and not from the NWS web services. This web service is Section 508 and DOC security compliant.

2. Availability:

This service will be available as during the experimental transition phase with a current hosting of both the RIDGE I data on this page: <https://radar.weather.gov> and the “preview” RIDGE II webpage: <https://preview-radar.weather.gov>.

RIDGE II will display the following data products from all US-based radars (including NEXRAD (WSR-88D) and Terminal Doppler Weather Radars (TDWR)).

The following products are available from the Mosaic radars (Conus, Alaska, Hawaii, Guam and Puerto Rico):

- Raw Base Reflectivity (MRMS - Multi-Radar Multi-Sensor)
- Base Reflectivity (MRMS - Multi-Radar Multi-Sensor) [Quality-Controlled]
- Raw Composite Reflectivity (MRMS - Multi-Radar Multi-Sensor)
- Composite Reflectivity (MRMS - Multi-Radar Multi-Sensor) [Quality-Controlled]
- Precipitation Type (MRMS - Multi-Radar Multi-Sensor)
- Echo Tops (MRMS - Multi-Radar Multi-Sensor)

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

- Super Resolution Base Reflectivity (Level II)
- Super Resolution Un-Aliased Base Radial Velocity (Level II)
- Dual-Pol Digital Hydrometeor Classification (Level III)
- Dual-Pol Digital Differential Reflectivity (Level III)
- Enhanced Echo Tops (Level III)
- Surface Rainfall Accumulation One Hour Running Total (Level III)
- Storm Relative Mean Radial Velocity (Level III)
- Surface Rainfall Accumulation Storm Total (Level III)
- Composite Reflectivity (Level III)
- Digital Vertical Integrated Liquid (Level III)
- Dual-Pol Digital Storm Total Precipitation (Level III)
- Base Radial Velocity (Level III)

For individual TDWR Radars the following products are available:

- Base Reflectivity (Level III)
- Base Radial Velocity (Level III)
- Vertically Integrated Liquid (Level III)

- Composite Reflectivity (Level III)
- Echo Tops (Level III)

The preview webpage for the RIDGE II Radar Products:
<https://preview-radar.weather.gov/>

The preview geoTIF images can be accessed at:
<https://mrmst.ncep.noaa.gov/data/RIDGEII/>

The preview Watch-Warning-Advisory (WWA) shapefile are available for download from:
<https://tgftp.nws.noaa.gov/SL.us008001/DF.sha/DC.cap/DS.WWA/>