



Providing Selectable Elevation Layer Mosaic Generation Capability & Improving the Quality of WARP Mosaic Products



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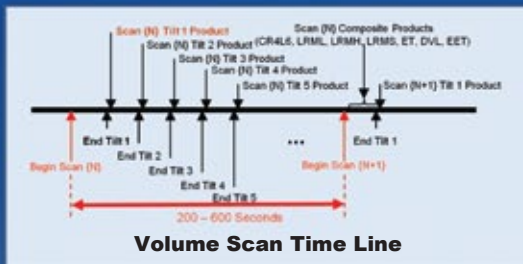
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WARP

Introduction

The WARP program is developing a true user-selectable elevation layer radar mosaic product generation capability. The approach being implemented will enable specific improvements in the overall quality of the WARP mosaic products. These enhancements will provide controllers with radar imagery which is closer to real time, resulting in enhanced shared situational awareness with pilots.

The generation of radar mosaic products directly from high resolution base radar product data has significant advantages to those generated using radar products from end-of-scan WSR-88D RPGs and rendered in four-fixed elevation layers.

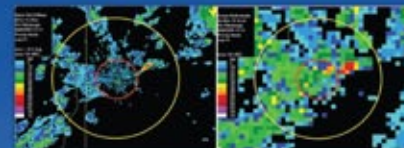


Volume Scan Time Line

Current Mosaic

Layer composite mosaic products are displayed on the Air Traffic Controller display systems (DSR, ERAM, MEARTS and ATOP). WARP currently generates mosaics in the NAS plane projection for four fixed-elevation layers: 0-24 Kft, 24-33 Kft, 24-60 Kft and 0-60 Kft layers. WARP generates each of these layered mosaic products from a specific volume-based layer composite reflectivity radar product generated by the WSR-88D Radar Product Generator (RPG) at the end of each radar volume scan interval. The current WARP mosaic products (ex: echo top, VIL, tilt 1 base reflectivity mosaic products in addition to layer composite reflectivity mosaics) have limitations that are inherent in the volume-based radar products used for generating the WARP mosaics.

Comparison of Radar Product Data Levels



Tilt 1 Base Product

0-60 Kft Composite Product

Example of Overestimated Echo Top Elevations



JGX Enhanced Echo Top Product

QLX Enhanced Echo Top Product

Comparison of WARP Layer Mosaic Product Coverage Areas



0-60 Kft Layer Composite

0-24 Kft Layer Composite

Enhancements to Users

- Unlimited user-selectable elevation layer mosaic generation capability, real time on demand
- No layer-specific processing or product generation by the WSR-88D radars required
- Significant reduction of mosaic product data latency
- Increased effective mosaic product data coverage area
- Increased spatial resolution
- Ability to map radar product data in elevation
- Improved data level resolution for elevation layer mosaic products
- Consistent data level mapping across all elevation layer mosaic products
- Improved mosaic product data level accuracy
- Increased capability for identifying and removing non-weather radar returns