

## IRIS 7.05 Release Notes

These notes cover changes made in IRIS since release 7.04 of 26 February 1999. If you are upgrading from an earlier release, please read those notes also. The current hardcopy versions of the manuals are: *IRIS/Open User's Manual: 7.05*, *IRIS/Open Utilities Manual: 7.05*, *IRIS/Open Installation Manual: 7.05*, and *IRIS/Open Programmer's Manual: 7.05*.

### Bug Repairs

1. COMP product tolerance for height differences in input CAPPIs was raised from 100 to 1000 meters.
2. Looking at 3D CAPPI using the up/down arrows would mess up the WIND/NDOP Output options.
3. Fixed bug in picture products which caused rings in the products. This was introduced with the zoomed colors in 7.01.
4. The data values stored in rainrate XSECT products have been wrong since before 6.00.
5. The ocean fill color in displays was not correct when overlaying a color product on top of the primary product.
6. Repaired a bug in the display of the PPI product. The overlay and range rings were incorrectly shifted for products with the radar not in the center of the image.
7. The product overlays menu pop-up list of product choices was not correctly filled in on systems without all products licensed.
8. The POM menu was crashing on pressing the "show headers" button on systems without all products licensed.
9. The Real-Time display transmission will now automatically restart if the network connection fails and then recovers. Errors in rtd\_xmt are also signalled better now.
10. Fixed the broken ASCII archive inventory files. These were broken since we changed to 5-digit file numbers in 7.00.
11. Repaired bad text in the cursor readout for the "unknown" color in the TOPS product. This problem was introduced in 7.01.
12. Repaired a memory problem in **irisnet** which was causing it to crash under IRIX 6.5.

### New Features

1. Reflectivity gradients are now used to extrapolate up in CAPPI and XSECT products of either reflectivity or rainfall rate. This scheme is only used for a given pixel when the PPI below has valid data and the PPI above indicates below minimum detectable. In this case, the lower value is lowered linearly in proportional to the distance from the PPI to the height. The gradient used is the larger of a fixed value from **setup**, (see Setup Changes 1. ) and the value required to reach minimum detectable at the next PPI.

2. IRIS products now have explicit control over what is meant by zero height. For example: suppose you wish to composite 1-km CAPPIs from a radar at the top of a mountain (900 meters MSL) and from a radar in the valley (100 meters MSL). You could pick a zero reference height of 100 meters. In this case the 1-km height means 1-km above the 100 meters reference (1000 m above the valley radar, 200 m above the mountain radar). All heights in IRIS except the Ingest height cut-off are relative to this reference height. See also Setup Changes 2. and Data Format Changes 2. below.
3. Consistent with the new zero reference height, IRIS RHIs are now drawn with the reference height at the bottom and the radar origin positioned appropriately. For radars above the reference, negative elevation angles are now included in the display.
4. The VVP product can now record the mean and standard deviation of both linear Z values and log Z values. This, along with the addition of the Z-count in 7.00, allows better thresholding on the quality of the reflectivity gradients produced. Previously only the linear average and log standard deviation were recorded. **Productx** is enhanced to show the new data, and allow some flexibility on data displayed. Some effort has been made to make the data format backwards compatible. To generate the new fields, please go to the product configuration and toggle the Z data button off and on.

## Setup Changes

1. There are two **setup** questions in the Product “*Product Generation*” section to configure the new extrapolations. “Use Vertical Gradient” turns the feature on or off. For non-extrapolatable data types (like velocity) IRIS will repeat the data value half way to the next tilt if it is turned on in the XSECT product. For reflectivity and rainfall rate the “Minimum Vertical Gradient” is used. Note that if the vertical gradient feature is turned off, the XSECT product will widen single PPI values a little so they can be seen. SIGMET recommends enabling this feature with a gradient of 10 dB/km.
2. There is a new **setup** question in the Product “*Product Generation*” section to configure the new product reference height. All product related heights are relative to the “Zero reference height”. Entering 0 means that heights are relative to mean sea level. Before release 7.05, all heights were relative to the radar.
3. Removed the picture product threshold value question. A value of 1 is always used.

## Data Format Changes

1. Removed the “irej\_color” field in the product\_end structure. This indicated the data value used for thresholded data in picture products. A value of 1 can always be assumed.
2. There is a new field “iReferenceOffset” in the product\_end structure. This documents the height offset in meters between the product heights and the radar height. For example a value of 100 means the radar is 100 meters above the reference height. Before 7.05, this slot in the file was unused, and probably set to zero. This number is filled in by the product generating system, not the ingest system.

3. The vvp\_results structure now contains additional fields for the mean log reflectivity and linear reflectivity standard deviation. See the *IRIS Programmer's Manual* for details.
4. The range scale on PPI product is now horizontal range not slant range as before. All PPI products made before 7.05 should be remade before displaying on a 7.05 or later system. Otherwise the ranges will be slightly wrong for elevations other than zero.