Problem with NOHRSC snow water equivalent and snow cover maps on AWIPS and D2D.

This document describes the problem, a short-term, and a long-term solution to the georegistration problem associated with NOHRSC snow cover and snow water equivalent maps on AWIPS when viewed using D2D.

The problem is: The SWE data field does not line up with the map background. it appears to match out west but degrades in alignment as you move further east.

This is the problem we've been struggling with since October. Here's a brief history:

- This is the first year we created AWIPS-destined SWE images from the model. Since (unlike our interpolated SWE product) we now map SWE nationwide, our SWE GRIBs are now considerably larger;
- Larger GRIBS forced us to reduce the resolution of our SWE GRIB files (now same as for our snow cover GRIBs);
- As a result SWE GRIBs are smeared in the west-east direction on AWIPS D2D;
- We checked our software in detail. Through various testing we concluded the problem was most likely in AWIPS D2D; and finally
- We contacted AWIPS support. They developed a solution (see below). It wasn't made clear to us that the solution they provided was limited to our AWIPS installation. They fixed our AWIPS but no one elses.

Here's the problem:

- Displaying GRIB files on AWIPS D2D requires two configurations;
- The configurations are developed for each product class (ie, NOHRSC SWE GRIBs) by AWIPS developers;
- The first configuration (a record in a file), among other things, points to the second configuration (a subfile of some sort) which contains product-class-specific AWIPS D2D display parameters;
- If the spatial domain or the resolution of a product class is altered, the configurations have to be updated. This requires a change request; and
- None of this was known to us. We always assumed that AWIPS uses the GRIB header to calculate display parameters.

The long term solution;

- The AWIPS developer we're working with will forward a change request in our behalf, requesting that his fix be included in a subsequent AWIPS build; but
- Since he considered this to be a minor problem (in the scope of things),

the fix may not be included in the next AWIPS build.

Short term solution:

- Since we altered the SWE GRIB resolution to match the snow cover GRIB
  resolution, we can modify the the first of the two SWE configurations
  to point to the snow cover display parameters configuration. The steps
  for doing this OURSELVES were provided by the AWIPS developer:

  - Make a backup copy of /data/fxa/nationalData/imgDataKeys.txt

  - Make the following change to /data/fxa/nationalData/imgDataKeys.txt

    from

    25502|gridSnow2 |0 | |,1 | |
    |img/SBN/netCDF/LATLON/SNOW/SWE | |
    |NOHRSC:NOHRSCO:SWE,swe_image_trans.txt

    to

    25502|gridSnow |0 | |,1 | |
    |img/SBN/netCDF/LATLON/SNOW/SWE | |
    |NOHRSC:NOHRSCO:SWE,swe_image_trans.txt

  - Then restart GribImgDecoder process on PX1

If you have any questions or require additional information on this issue, contact
 Andy Rost at andy.rost@noaa.gov   .