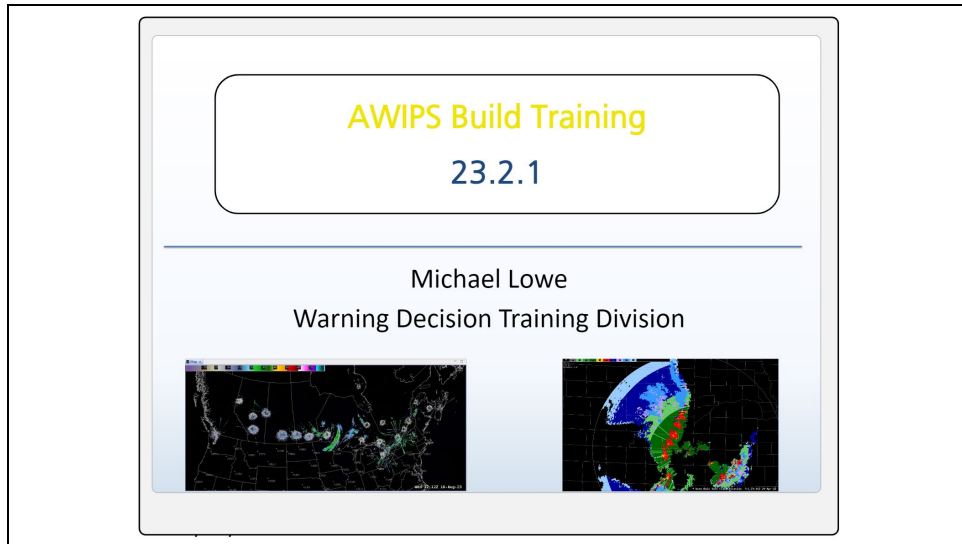


Slide 1



The slide content is contained within a white rounded rectangle with a thin black border. At the top, the text "AWIPS Build Training" is displayed in yellow, with "23.2.1" below it in blue. A horizontal blue line separates this header from the presenter information. The presenter's name, "Michael Lowe", and his affiliation, "Warning Decision Training Division", are centered in black text. Below the text are two side-by-side meteorological images: the left one shows a dark map with white and green radar returns, and the right one shows a similar map with a prominent blue and green radar signature.

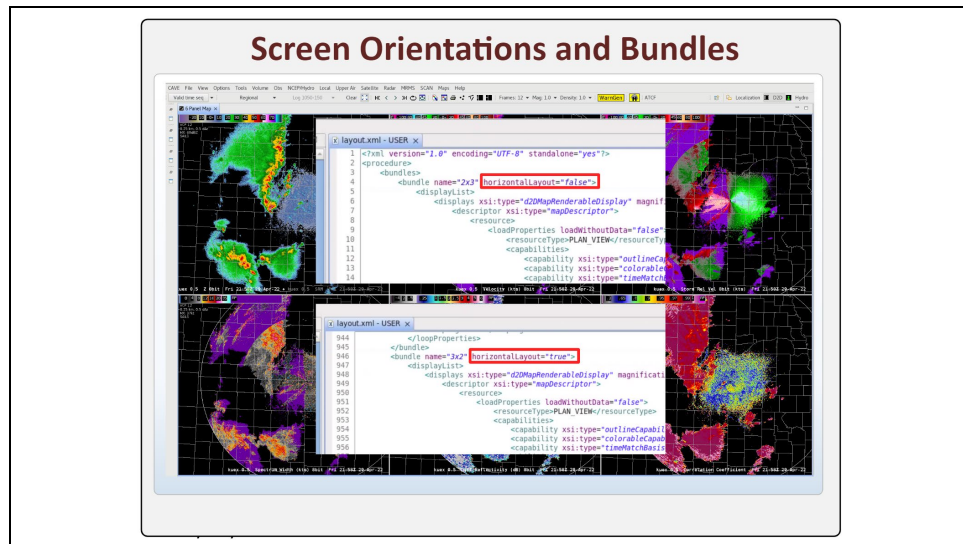
Welcome to the 23.2.1 AWIPS Build Training Overview. In this module we'll briefly review some of the more important changes in build 23.2.1. Jobsheets will be available at the end for practice. Let's get started.

New Multi-Panel Layouts

- 19 layout options available in 23.2.1
- Flexibility in amount of data visible on screen
- Optimize for screen orientation
- Layouts in columns x rows format

AWIPS Build 23.2.1 contains a whole new suite of multi-panel layouts. Previously there were only four options available, and now there are nineteen. These new layouts provide added flexibility in the amount of data you can view at once and allow you to optimize your panels for either a horizontal or vertical screen orientation.

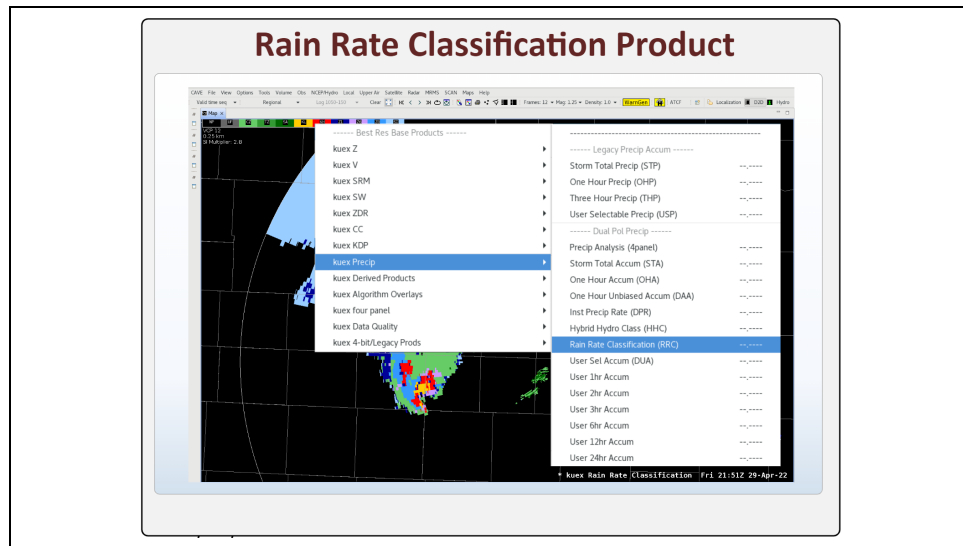
As before, the multi-panel layouts can be accessed by holding down a right-click in CAVE. Build 23.2.1 has an additional menu to accommodate all the new layout choices. Note that the options for layouts that are not perfect squares are listed in column x row format. So, for example, selecting the 4 x 2 layout gives you an 8-panel screen with four columns and two rows.



Using an inappropriate ratio of columns and rows can leave you with a lot of wasted space on your screen. To optimize screen space on landscape or horizontal monitors, the number of columns should be larger than the number of rows. For portrait or vertical monitors, more rows than columns is optimal.

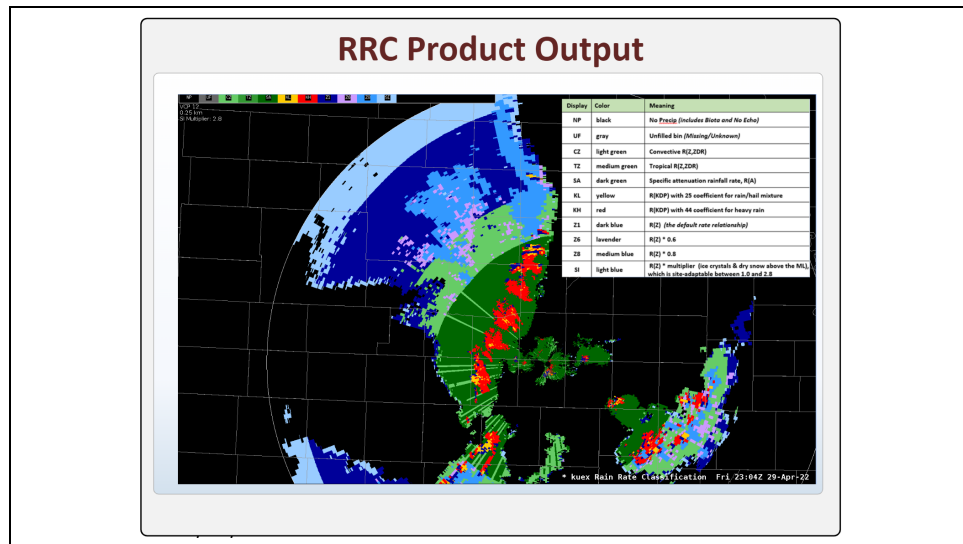
If you have saved procedures and you want to swap the number of columns and rows, you can load the procedure, right-click and hold to bring up the new layouts menu, and select the option you want. Save the procedure to keep your changes. You can also switch your columns and rows by changing the value of the horizontalLayout variable inside your procedure.

Slide 4



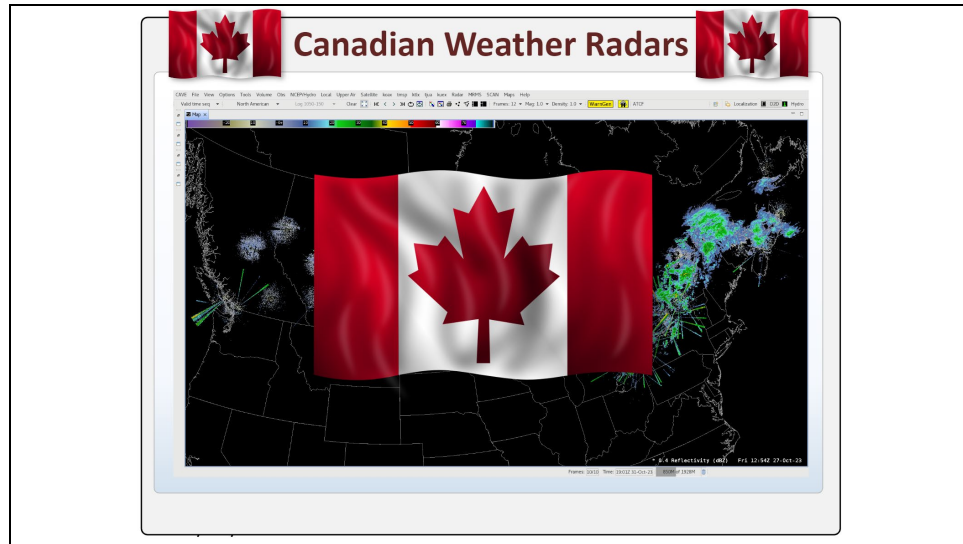
AWIPS Build 23.2.1 will display the new Rain Rate Classification (RRC) product available in RPG Build 21, which was deployed in 2023. The RRC has been added to the national RPS lists, so it will show up after installing 23.2.1. To see what build of RPG you have, check the link in the Resources menu at the top right of this window.

The RRC product can give insight into which equations are driving heavy precipitation accumulation estimates, and therefore how reliable the high estimates may be. The RRC product can be found within the Precip menu for your local radar.

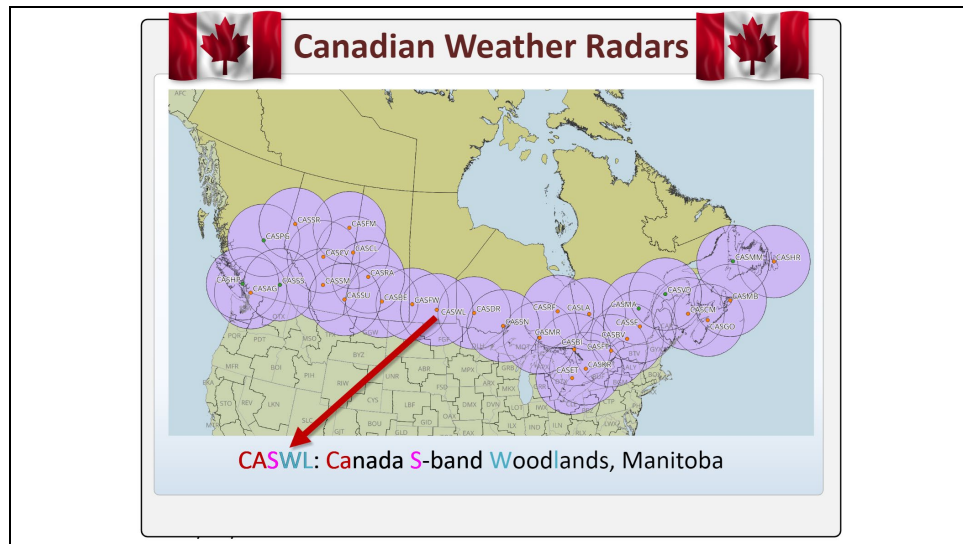


An example of the RRC product output is shown here with the key overlaid. Areas in dark green are closest to the radar and use the specific attenuation rainfall rate relationship, giving the most confidence in their precip estimates. Areas with red, yellow, and lighter greens also use ZDR or KDP dual-pol rain rate relationships. Above the melting layer, where you find blues and purples, legacy reflectivity-only rainfall rate relationships are being applied, sometimes with crude 80% or 60% coefficients. In those areas the forecaster would have less confidence in the radar estimated accumulations.

Slide 6



Build 23.2.1 will ingest and display dual-pol radar data from the Canadian weather radar network, and the data transmission on the SBN is anticipated shortly after deployment. If you would like more information on this topic, click the Canadian flag in the middle of the screen. Otherwise, click "Next" to move on to the next topic.



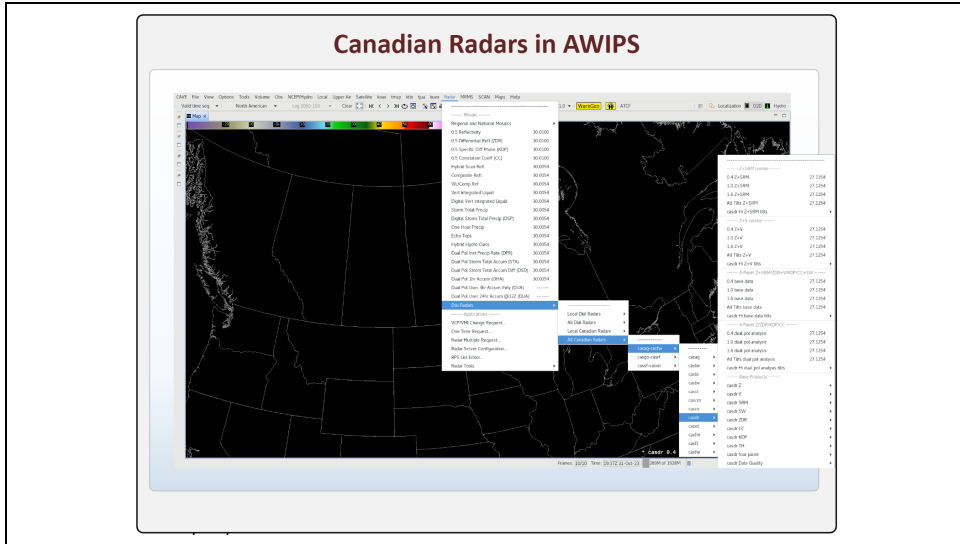
Following an agreement with Environment and Climate Change Canada, AWIPS Build 23.2.1 will ingest and display radar data from the Canadian weather radar network. There are 32 dual-polarization S-Band radars in the Canadian radar constellation, and the details of which radars will be transmitted on the SBN will be settled sometime after deployment of 23.2.1 begins.

The Canadian radars all have five-letter call-signs. The first three letters are always CAS: “CA” for Canada and “S” for S-Band. The final two letters vary and represent the location of the radome. For example, CASWL is located in Woodlands, which is near Winnipeg, Manitoba.

Slide 8

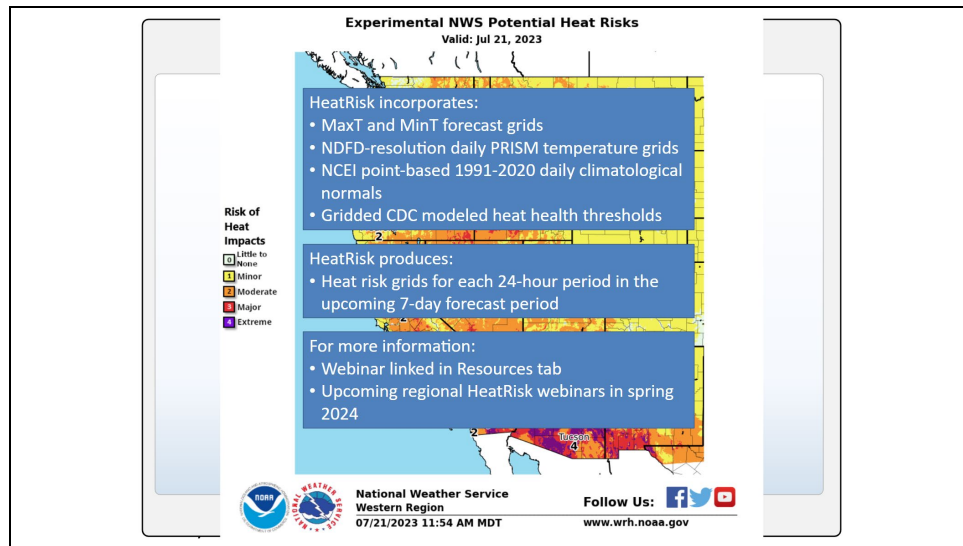
	Canadian Radars	WSR-88D
Band	S-band	S-band
Volume Scan Slices	17 slices	VCP dependent (varies from 5 to 15)
Volume Scan Time	6 minutes	8-10 minutes for clear air mode; 4-7 minutes for precip modes
Volume Scan Orientation	Scans highest to lowest	Scans lowest to highest
VCP Modes	No clear air modes, SAILS, or MRLE	Clear air and precip modes, SAILS, MRLE
Lowest Tilt(s)	Most sites at 0.4°; Some mountain radars at 0° or -0.3°	Typically 0.5°; Some sites have lower supplemental 0° or -0.2° scans
Reflectivity Range	Up to 330 km	Up to 460 km
Velocity Range	Up to 330 km	230 km normal; 300 km super res
Precip Range	Up to 330 km	260 km
Beamwidth	0.5° lowest 6 tilts; 1° for rest	~1° single pulse; 1.4° effective beamwidth; 0.5° for batch cuts
Gate Depth	500 m	1 km normal resolution reflectivity; 250 m for velocity and dual pol

The Canadian weather radars are dual-pol, and all the dual-pol data is ingested into AWIPS. While there are many similarities between Canadian and American radars, there are some important differences. For example, Canadian radars start at the highest tilt and scan downwards. The lowest elevation for most Canadian radars is 0.4 degrees, though some mountain radars use 0 or -0.3 degrees. Canadian radars do not use clear air modes, SAILS, or MRLE at present. Also take note of the differences in the ranges for various products, as well as beamwidth and gate depth.



Both a Canadian radar mosaic and individual radars are available in AWIPS Build 23.2.1. The Canadian mosaic can be found under Regional and National Mosaics in the Radar menu. Note that the reflectivity data can be noisier than the WSR-88D data due to signal interference.

To load data from a particular radar, just navigate to Dial Radars and look in the All Canadian Radars menu. Here you will find the full suite of dual-pol variables for your selected radar, except there is no Hydrometeor Classification Algorithm.



Here are a few miscellaneous changes in build 23.2.1:

The Legacy Local Storm Report (LSR) application has been removed. Use a web application or local app for your LSRs.

Non-dedicated radar connections have reduced products that filter out the SBN product requests.

The SPC Day 4-8 probability of severe thunderstorms has been added to the NCEP/Hydro menu.

The NSHARP Tool in the Tools menu now supports multiple soundings. You can use the NSHARP Resource map to select the soundings you wish to have available in NSHARP.

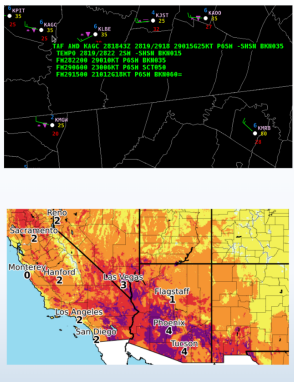
The AWIPS Interactive Reference (AIR) "Reference on Product" VLab searches will work again now that the URLs have been fixed.

A new multi-color TAF station plot that is sampleable is now available from the Upper Air menu. See the jobsheet for more on the display.

The GFE-based HeatRisk prototype that has been used in Western Region for over 5 years to create grids of heat risk is in the process of being integrated into 23.2.1, and is expected to be added in a dash release shortly after deployment begins. With 23.2.1, HeatRisk is expanding CONUS-wide and transitioning to experimental status. The HeatRisk cron jobs and GFE procedures use MaxT and MinT forecast grids, NDFD-resolution daily PRISM temperature grids, NCEI point-based 1991-2020 daily climatological normals, and gridded CDC modeled heat health thresholds to create heat risk grids for each 24-hour period within the upcoming 7-day forecast period. For more information on HeatRisk, see the link to the webinar in the Resources tab and keep an eye out for regional HeatRisk webinars in spring of 2024.

Summary

- New multi-panel layouts
 - Optimize display space for screen orientations
- Rain Rate Classification algorithm
- Canadian weather radars
 - Nationwide reflectivity mosaics
 - Individual radars with full dual pol suite
- Miscellaneous changes
 - Legacy LSR application removed
 - Reduced SBN product request filters for non-dedicated radar connections
 - SPC Day 4–8 Prob Severe added
 - NSHARP Tool supports multiple soundings
 - AIR searches are working again
 - Multicolor sampleable TAFs plot added
 - HeatRisk GFE product available CONUS-wide



In summary, new multipanel layouts are available to optimize display space on horizontal or vertical screen orientations. You can easily swap the number of columns and rows from the right-click and hold menu.

A new Rain Rate Classification algorithm has been added to aid in understanding the rain rate relationships contributing to dual pol QPE.

Canadian radar data is anticipated shortly after deployment of Build 23.2.1. The data is available as a country-wide reflectivity mosaic, and the full dual-pol suite of products is available for each dial radar.

Other small changes include the removal of the legacy LSR application, non-dedicated radar connections are filtering out duplicate SBN data requests, the SPC day 4-8 probability of severe weather has been added, the NSHARP Tool loaded from the Tools menu supports multiple soundings, the AIR searches are now working again for all sites, a new multi-color and sampleable TAF station plot is now available, and the experimental HeatRisk product in GFE is being integrated into a special dash release for all CONUS sites shortly after 23.2.1 deployment.

Jobsheets/References


See <https://vlab.noaa.gov/web/oclo/awips-build-changes>

Forecaster Jobsheets

- [Multi-panel layouts](#)
- [Rain Rate Classification product](#)
- [Canadian radars](#)
- [Multicolor sampleable TAF plots](#)

Forecaster References

- [Canadian radars](#)



Contact: nws.wtdt.awips@noaa.gov

You've now completed the AWIPS Build 23.2.1 overview. You can find jobsheets for the major changes in this build by clicking this link to take you to the VLab 23.2.1 Jobsheets page. You can alternatively right-click on a product in the Product Legend in CAVE and select Reference on Product. This will bring up the AWIPS Interactive Reference search page. Type AWIPS Build Changes in the Keywords search then click Update. This should show you the Build Changes page as your top result.

If you have any further questions, please email the WDTD AWIPS team at this email address, and enjoy the new 23.2.1 capabilities!