

FRONT CONCEPT

FRONT provides a mesoscale observational framework anchored by the NCAR S-Pol and CSU-CHILL radars when they are at their home-base locations in northeast Colorado. Data collection has been streamlined through remote interactive control and unattended radar operational capabilities.

Key FRONT Features:

- Dual-pol / dual frequency radars
- Multiple Doppler wind syntheses
- Supporting networks (LMA, GPS H₂O)
- User-supplied sensors accommodated
- Remote radar control and data display
- Simplified approval for small (~2 - 3 cases) and educational projects

Further Information:

http://www.eol.ucar.edu/observing_facilities/front



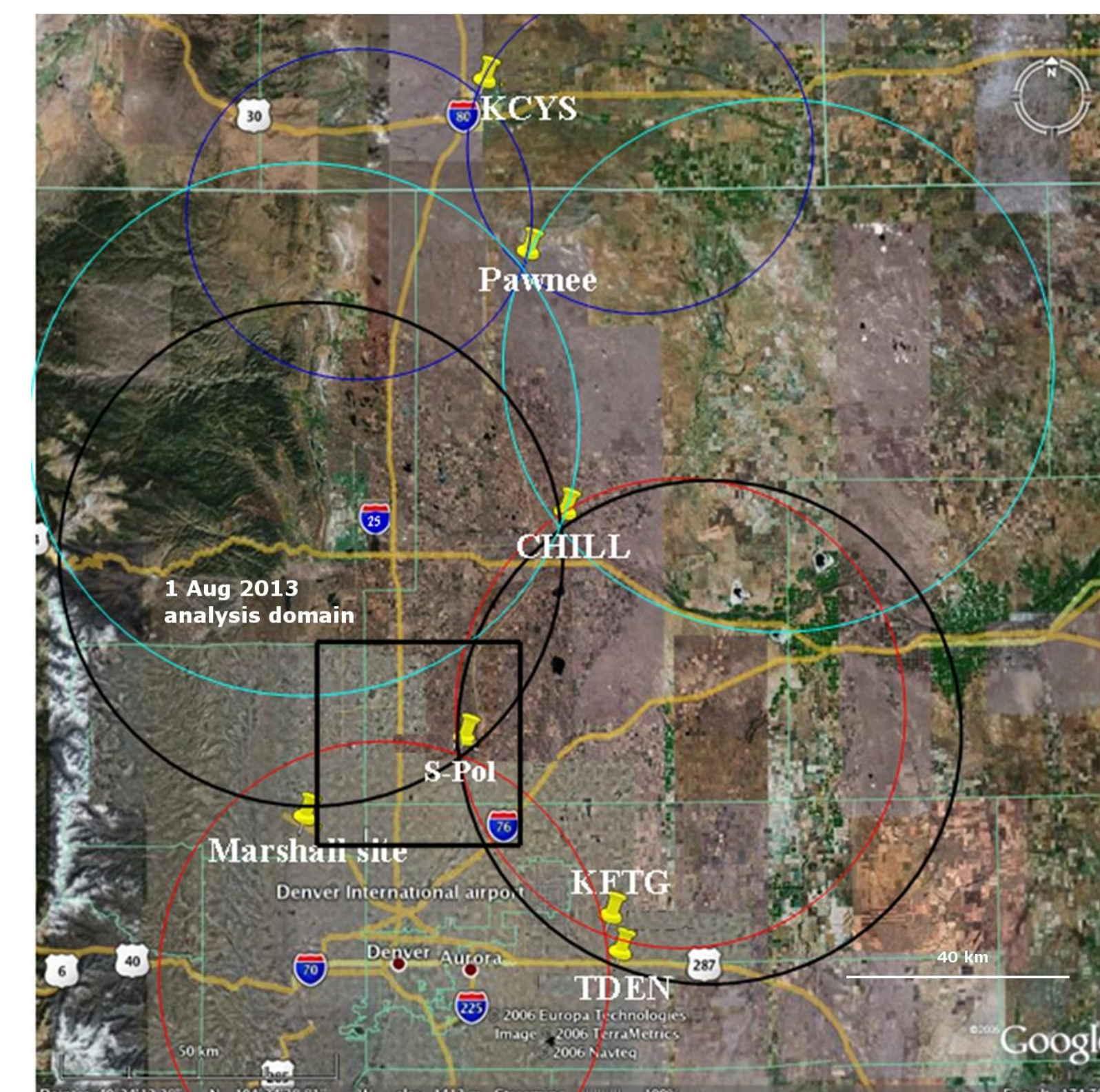
CSU-CHILL:
S and X band



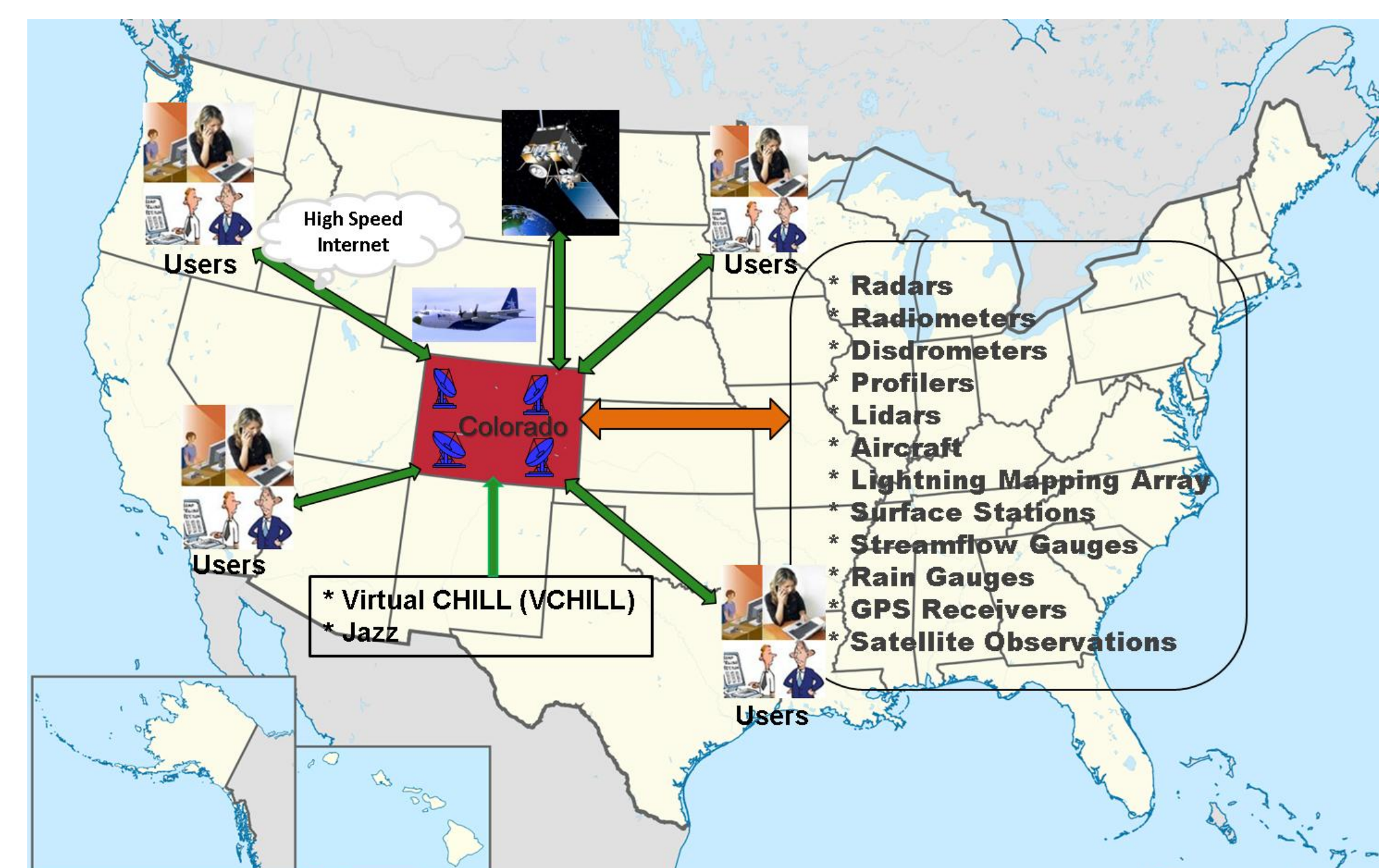
EOL S-Pol:
S and Ka band

FRONT NETWORK

Mesoscale radar coverage provided in FRONT by S-Pol, CHILL, Pawnee, and the neighboring operational radars.



S-Pol site construction near Firestone, CO. Radar to be installed in October, 2013.

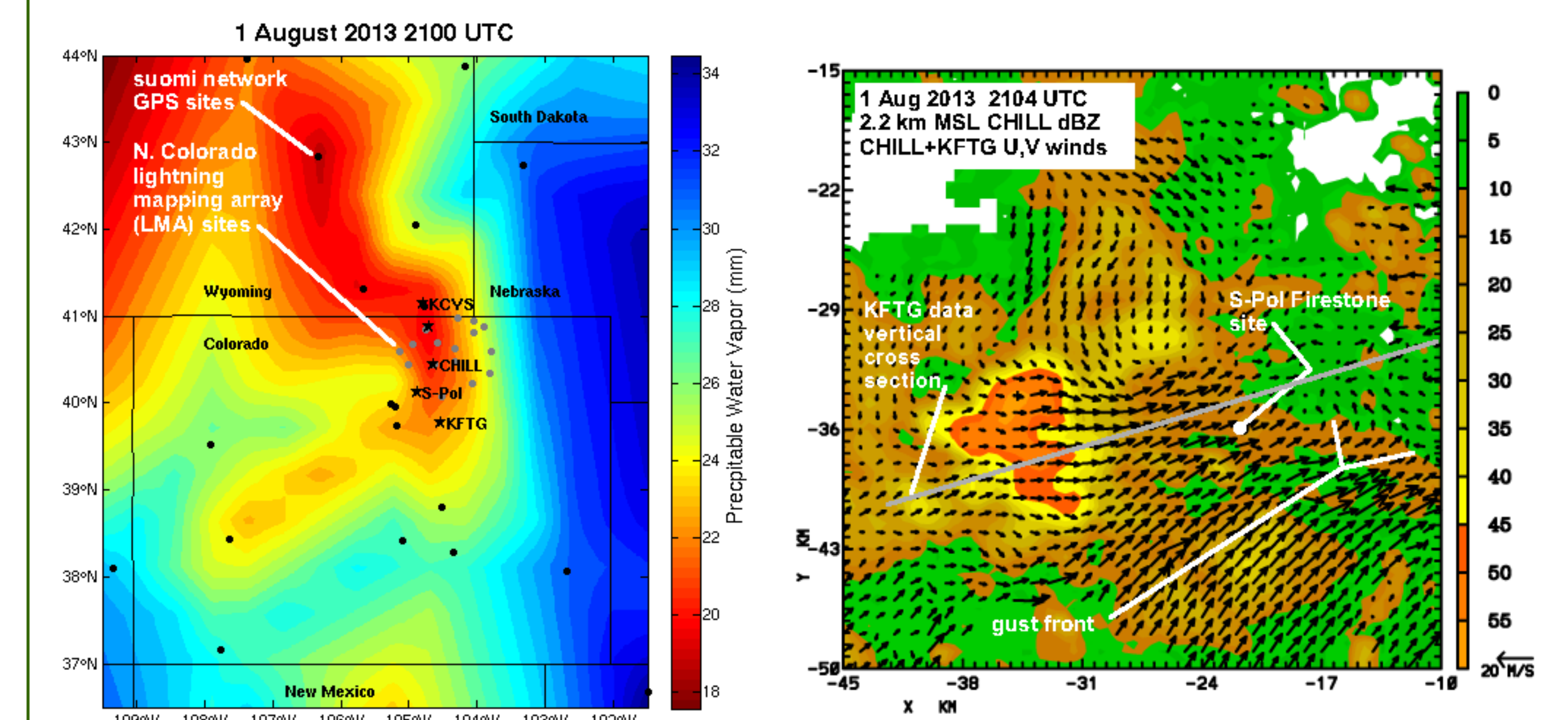


FRONT is designed for remote internet access. Supporting instrumentation is locally available.

EXAMPLE DATA

Data collected by some of the available FRONT assets was recorded on 1 August 2013 during a 20 hour project conducted by R. Roberts and J. Wilson of NCAR.

The following two plots show the mesoscale integrated water vapor distribution from the COSMIC GPS network (left), and the low level dual-Doppler wind field obtained by synchronizing the CSU-CHILL scans with those of the NWS KFTG radar (right).



Below left is the radial velocity pattern that would have been seen from the S-Pol site. Convergence due to the gust front is evident northeast of the radar. Lower right plot shows the lightning radiation sources that have been located in 3D by the northern Colorado Lightning Mapping Array (LMA).

