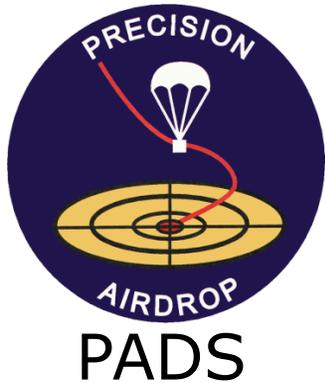




LAPS Applications:

High Resolution LAPS is used to initialize WRF model runs and other systems around the globe

RSA (Range Standardization And Automation System)

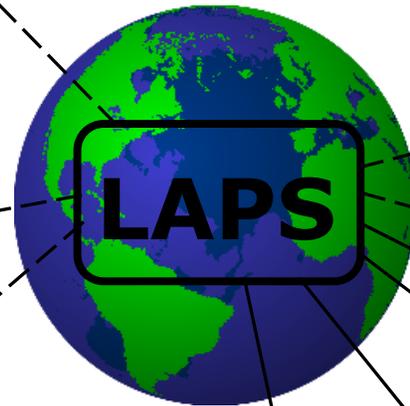


PADS



Ensemble

AFTAC (Air Force Technical Applications Center)



DFW



SEA



NYC



KSC



Projects using LAPS/WRF to support dispersion models:

RSA - *Range Standardization and Automation Weather Support System*

- Personnel: Linda Wharton, Steve Albers, Isidora Jankov, Dan Birkenheuer
- Runs LAPS and MM5 or WRF with cycling to provide real-time products for an AWIPS display and as input to dispersion models
- Currently runs at Vandenberg AFB and ran at Kennedy Space Center
- Future: The Air Force has just extended its contract with Lockheed Martin to complete the Western Range Mission Flight Control Center. FAB's contract should also be extended.
- Why is it needed...?



Photo: Brian Webb

RSA - Range Standardization and Automation Weather Support System



... to support dispersion models predicting where toxic plumes from rocket launches will go.

... to provide high resolution weather data to help with launch decisions.

Projects using LAPS/WRF to support dispersion models:

AFTAC - *Air Force Technical Applications Center*

- Personnel: Wharton
- Provides nuclear treaty monitoring, nuclear event detection and analyzes disturbing events for nuclear identification.
- Runs a ten-member ensemble of LAPS and WRF using cycling at locations around the globe.
- Developed scripting to automatically run simulations using cycling and ingests available AFWA datasets into LAPS.
- Future: Ingesting new AFWA datasets into LAPS and WRF, converting to LAPS/STMAS analysis, new versions of WRF and providing direct output for dispersion models.



Projects using LAPS/WRF to support dispersion models:

GTAS - *Geo-Targeted Alerting System*



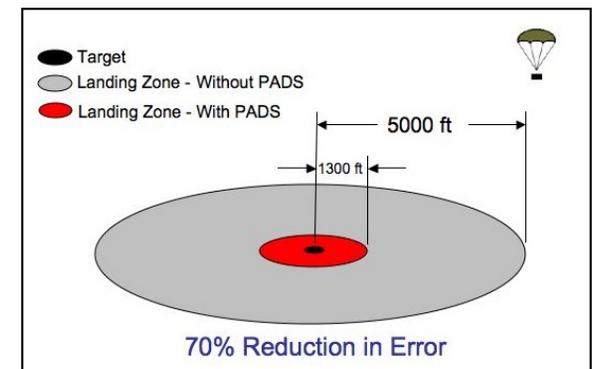
- Personnel: Linda Wharton, Hailing Isidora Jankov
- Initializes WRF-NMM with high-resolution LAPS and runs WRF at 4.5km with a 1.5km nest. Provides air dispersion and toxic plume information along with NOAA meteorological and environmental data to state and local emergency management agencies.
- Runs at Dallas-Ft Worth, Seattle, New York City and Kansas City.
- Future: Expand the DFW domain to include Houston to provide hurricane support. Apply ensemble methods to each domain.

Technology Transfer Projects using LAPS:



PADS - *Precision Air-Drop System*

- Personnel: Linda Wharton, Steve Albers, Dan Birkenheuer, John McGinley
- Increase wind accuracy in the LAPS wind analysis by using dropsonde wind data collected from the aircraft just prior to payload drop.
- Allows payloads to be dropped from up to 25000 ft with high accuracy.
- Reduces average distance between the center of the drop zone and the landing position from 5000 ft to 1300 ft, which is a 70% reduction in error.
- Won 2008 NOAA Tech Transfer Award.
- Currently in use by the US Military saving lives in Iraq and Afghanistan.



Technology Transfer Projects using LAPS:



ITWS - *Integrated Terminal Weather System*

- Personnel: Steve Albers, Dan Birkenheuer

-Developed in collaboration with MIT/LL and Raytheon to develop ITWS T-LAPS, providing real-time predictive weather impact decision aids for weather such as microbursts, storm cell information and terminal winds.

-In use at 40 ITWS sites across the US.

-Provides impact decision aids for Pilots, Air Traffic Controllers Traffic managers.

-Delivered to Raytheon.

Technology Transfer Projects using LAPS:

AWIPS II

- Personnel: Paul Schultz, Linda Wharton, Steve Albers, Dan Birkenheuer, Paula McCaslin, Kirk Holub
- LAPS has been in AWIPS since its inception.
- Current LAPS in AWIPS II utilizes scripts that pull raw data from the new EDEX database and create AWIPS I format netCDF files for ingest into LAPS.
- Future: The LAPS data ingest will be modified to ingest raw data directly from the EDEX database and other data available through web-services.

