



# Precision Air Drop System (PADS)

## Local Analysis and Prediction System (LAPS) Wind Forecasts

### Improve Air Drop Target Accuracy



Linda Wharton, Steven Albers, Daniel Birkenheuer, John McGinley, and John Smart  
NOAA - Earth System Research Laboratory

#### Problem

- Missing drop zone targets results in loss of payload and danger to personnel when dropping payloads from high altitudes.



Planning Systems Inc. Photo



U.S. Air Force Photo

#### For Example:

- Payloads intended for a valley in a politically friendly, mountain site may land in an adjacent valley, which may be a hostile location.
- Payloads may drop into populated areas endangering personnel and inhabitants.

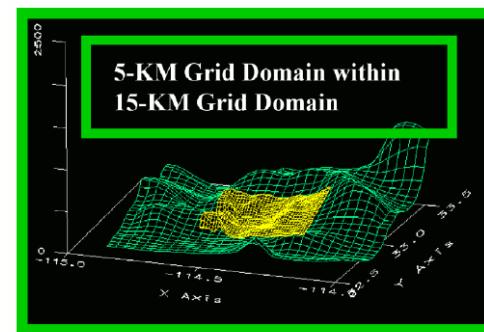
#### Solution

- Following NOAA's mission, the risk to property and lives can be reduced by reducing error in trajectory due to inaccurate wind forecasts, especially in mountainous terrain.



Planning Systems Inc. Photo

- ESRL's Local Analysis and Prediction System (LAPS) runs on a laptop aboard the aircraft producing a high resolution wind and weather forecast.

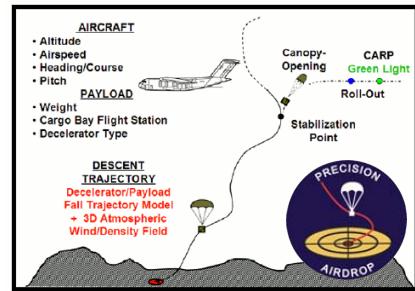


U.S. Air Force Photo/Tech. Sgt. Cecilio M. Ricardo Jr.

Wind data gathered from a dropsonde deployed over drop zone fine tunes the LAPS wind forecast for highest accuracy.

#### Successes

- The **drop zone size is reduced**, making recovery less dangerous for ground crews.
- The PADS system allows aircraft to fly at higher, safer altitudes with higher drop zone accuracy.**



#### Technology Transfer



LAPS software used in PADS won the 2008 Federal Technology Transfer Award.

- The PADS system has been transferred to PSI and is currently in active use by the U.S. Military saving live in Iraq and Afghanistan.

"We've revolutionized the way we supply the war fighter. This is a hellaciously great capability."

AF Maj Gen Scott Gray, Commander Air Mobility Warfare Center, Fort Dix.

#### Other Benefits

- The PADS system using LAPS can benefit civilian needs: the technology can be applied to firefighting, by increasing the accuracy of water drops and protecting ground crews.