

LR-x Real World Application The Abrams Fire

Diamond B Technology Solutions (DBTS) has recently retained exclusive rights to develop the L-REACT™ system (Local-Rapid Evaluation of Atmospheric Conditions) from the U.S. Army Research Laboratory (ARL) at White Sands New Mexico, which we have rebranded as, LR-x.

The LR-x system is truly a paradigm shifting technology as its ability to map wind field and toxic plume footprints, including wild fire smoke plumes, in near real-time, is unparalleled. By utilizing a host of multifaceted data capturing sensors and software, LR-x can:

- create 3D maps in the vertical and horizontal,
- develop real-time predictive analyses,
- incorporate legacy systems (including the popular ALOHA system) into a single view assessment,
- and provide other situational awareness tools.

It evaluates and tracks, in near-real time, airborne hazards as dangerous situations unfold.

In April 2011, ARL was able to test L-REAC (LR-x) in a real-world emergency - with tremendous success.

The Abrams Fire began on April 30th as a result of military exercises in the White Sands area. It would eventually burn 12,500-acres. By May 1st, smoke produced by the fire was clouding the skies over Las Cruces, New Mexico (population 101,000) northwest of the fire, eventually creating an air quality threat. According to the Charleston Gazette Mail: "Whipped by gusts of up to 55 mph, the Abrams Fire crested the Organ Mountains on Tuesday [May 2nd], **prompting some officials to ask residents to prepare for a possible evacuation...** Heavy winds Tuesday prevented aircraft from being able to drop water on the fire and its location made it impossible for firefighters to access the flames..." -source www.wvgazette.com

As reported by ARL:

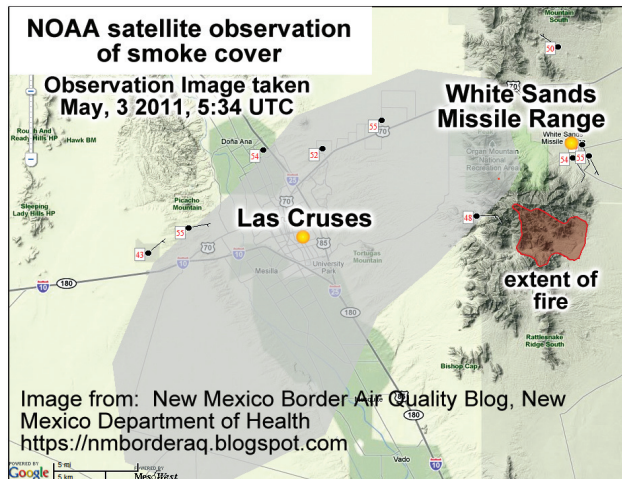
"This incident, known as "the Abrams Fire", escalated to the point where serious consideration for a community-wide evacuation (including the ARL workforce) had to be considered by the local authorities. Early on during this multi-day incident, the Installation Operations Center (IOC) called on the L-REACT™ System for consultation.

Communication links between ARL and the community advisors to the local authorities were immediately activated. For the next three days, the L-REACT™ System produced timely and relevant wind fields and sampled data output for the IOC, Fire and Rescue Departments, and the New Mexico offices of the Department of the Interior Bureau of Land Management. **Decisions to**

NOT evacuate the region, and when to implement a preventative "back" fire were made, in part, on the L-REACT™ System output. [Bold added] Post-incident reviews prompted such a strong interest in the L-REACT™ System, that training sessions were organized for the voluntary and professional emergency first responders... With this tool, civilian and military decision makers have already been able to lower the potential for human suffering, loss of life, and property damage." -from 2012AMS_IIPS_9A4_Vaucher-et-al_Paper.pdf



the Mobile L-REAC system



View of the Abrams fire at 6:25 pm (May 3rd)
looking from Las Cruces.
Image from: New Mexico Border Air Quality Blog

As the L-REAC system had been developed over years of work by ARL, DBTS is now positioned to upgrade and enhance the system as LR-x. In order to do so, we need vital input from first responders and those whose valuable work in fighting wildfires has created a wealth of knowledge to ensure that our work encompasses their needs. To help, or to participate in our early adopter program, please contact: