

* AIRPACT-Fire for enhanced
communication of human health
risk with improved wildfire smoke
modeling

funded by JFSP via BLM

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*Topics

*Abstract (3 slides)

*Themes

*Deliverables (3)

*Plans (3)

*Progress to date

From the Abstract

- * We propose AIRPACT-Fire to deliver enhanced wildfire related air-quality (AQ) forecast and 'nowcast' information. ... Messaging will be diverse and will vary by audience and by medium & include:
 - * the web, smart-phones, emails and/or SMS texts and automated phone messaging.
- * AIRPACT-Fire will be built upon AIRPACT-4 (now 5) and ClearSky2 using:
 - * SMARTFIRE, BlueSky and SMOKE for emissions; We may access IRWIN (Integrated reporting of Wildland-Fire Information) by DOI)
 - * CMAQ for chemistry and dispersion; and
 - * Google Maps web display for dissemination to the public and especially for use by NW-AIRQUEST.
- * AIRPACT-Fire is planning several enhancements:
 - * WRF-Sfire to simulate detailed, coupled atmospheric and fire behavior to improve wildfire emissions modeling. (Can this be in forecast operation, or can we improve forecasting through experimental simulations with WRF-Sfire?)
 - * The NOAA National AQ forecast to obtain boundary conditions.
 - * NOAA High Resolution (3-km) Rapid Refresh (HRRR) WRF results to produce 'nowcasts', delivering updated smoke results every few hours during regional wildfire events.
 - * VR: A potential exists for some observers in some environments to make visual range observations to complement other forecast products. Forecast-based visual range may become a useful product, but how to utilize user observed VR?

From the Abstract - 2

- * AQ forecast and 'nowcast' smoke results will be converted to Air Quality Index ... AQ health warning information may include:
 - * maps of hourly and 24-hr smoke concentration (PM2.5),
 - * maps of PM2.5-based Air Quality Index,
 - * related products for smart-phone access,
 - * optional user-selectable (or user-defined) results,
 - * ancillary supporting information for vulnerable individuals,
 - * registered experts' comment forum,
 - * advisories for medical professionals concerning likely patient numbers.

From the Abstract - 3

- * AIRPACT-Fire will be developed for the wildfire dominated Pacific Northwest (PNW) region already served by AIRPACT-5.
- * AIRPACT-Fire will be developed in collaboration with the USDA-Forest Service AirFire Laboratory, proposers of a complementary project to JFSP (status unknown).
- * The NW-AIRQUEST consortium will be asked to review plans and products and to provide general user group input.
- * Collaboration with Washington Ecology on health effects messaging will be complemented by outreach to regional public health groups, such as the American Lung Association.

* Themes

All about improving *advisory capability* for human health risk related to wildfire smoke!

- * Improved Modeling through:
 - * Coupled met & fire modeling (and how this is used...)
 - * Rapid refresh of meteorology for tracer dispersion,
 - * Validation against BBOP observations.
- * Visual Range for AQ Estimation- Online Workshop (or Co-laboratory)
- * Improved Communication of Risks
 - * Web page products
 - * Smart phone apps
 - * Automated phone notification?
- * Technology Transfer

* Plans

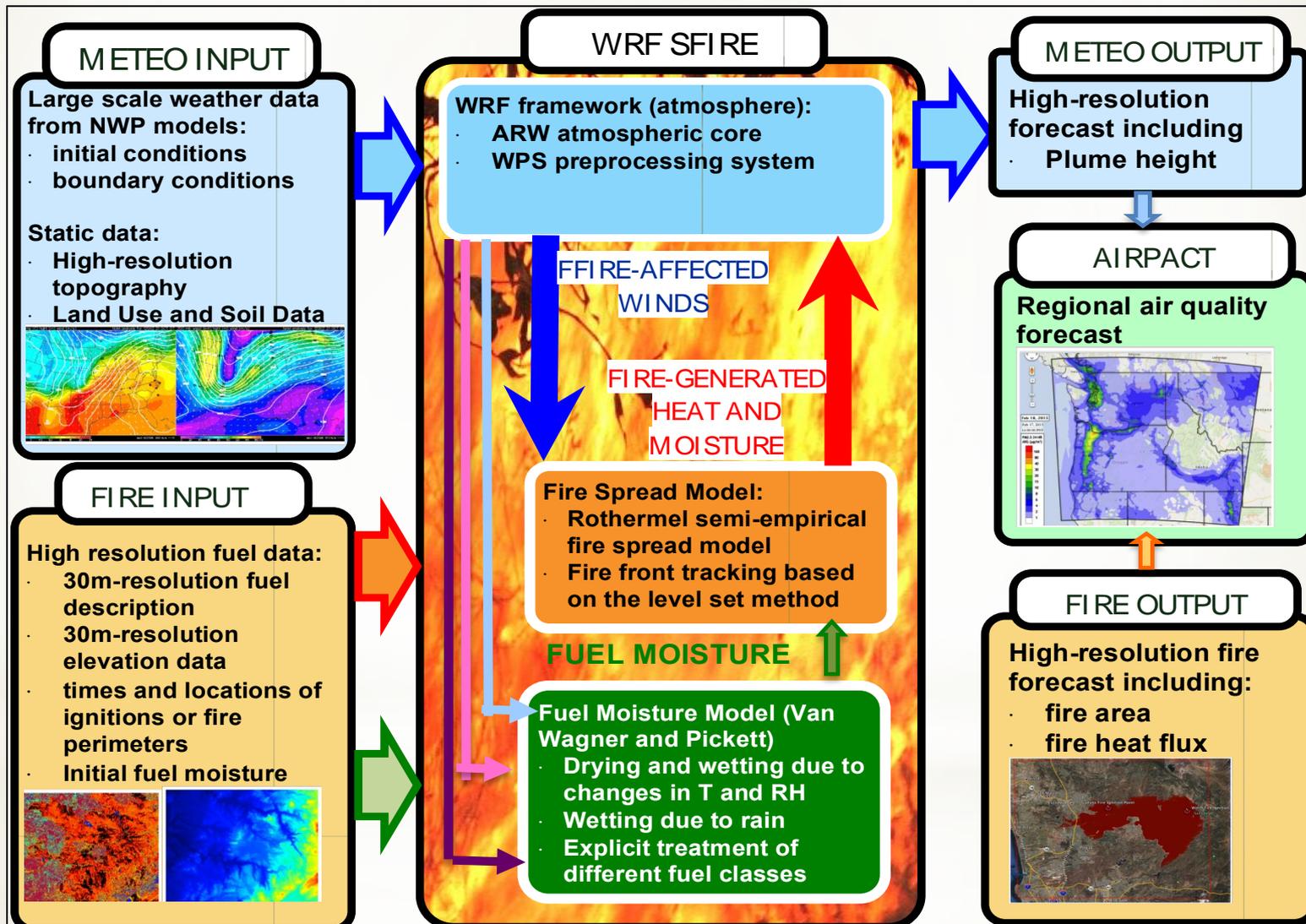


Figure 2. Components of the WRF-Sfire model.

* Plans

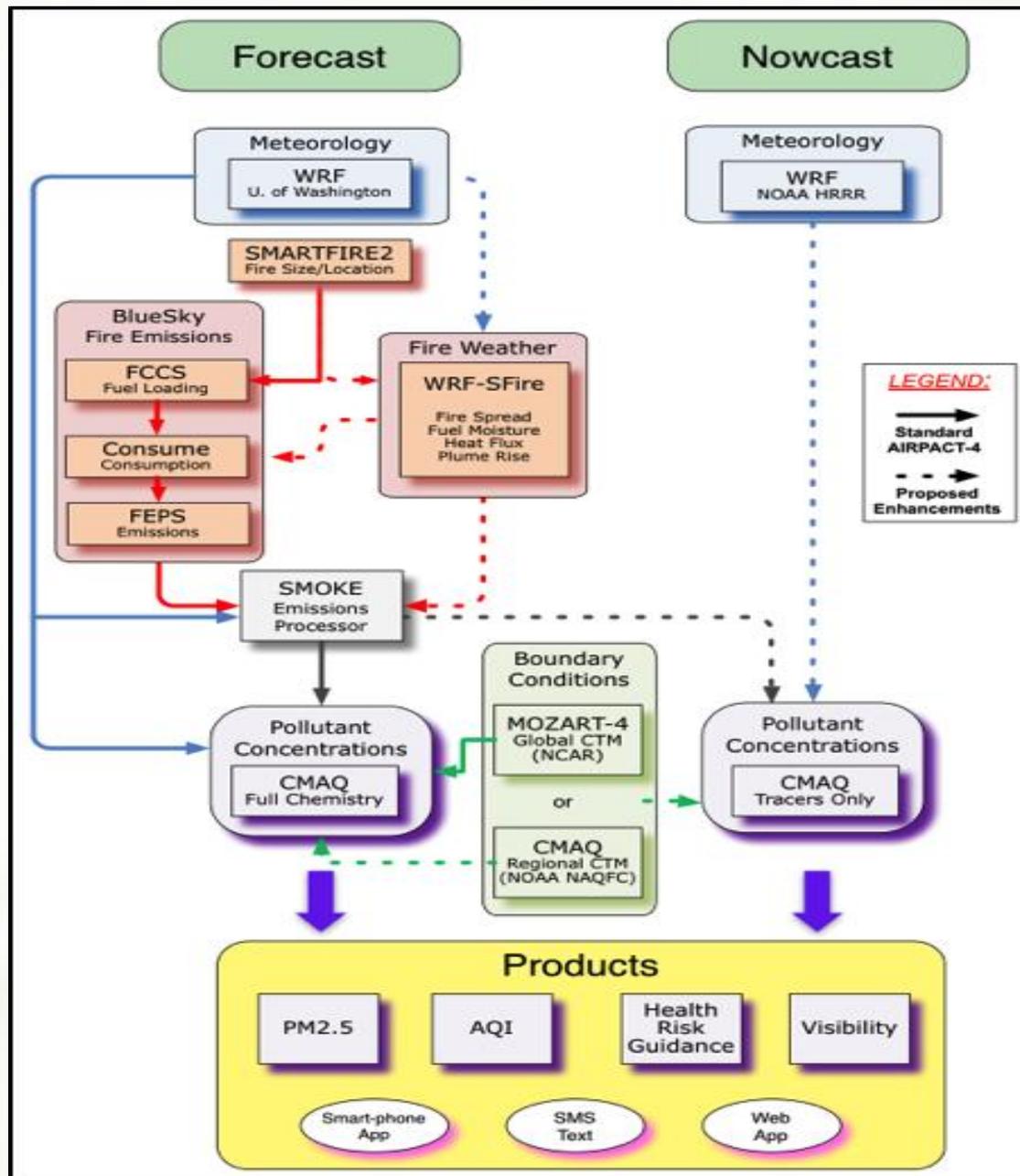


Figure 1. Forecast and Nowcast Components .

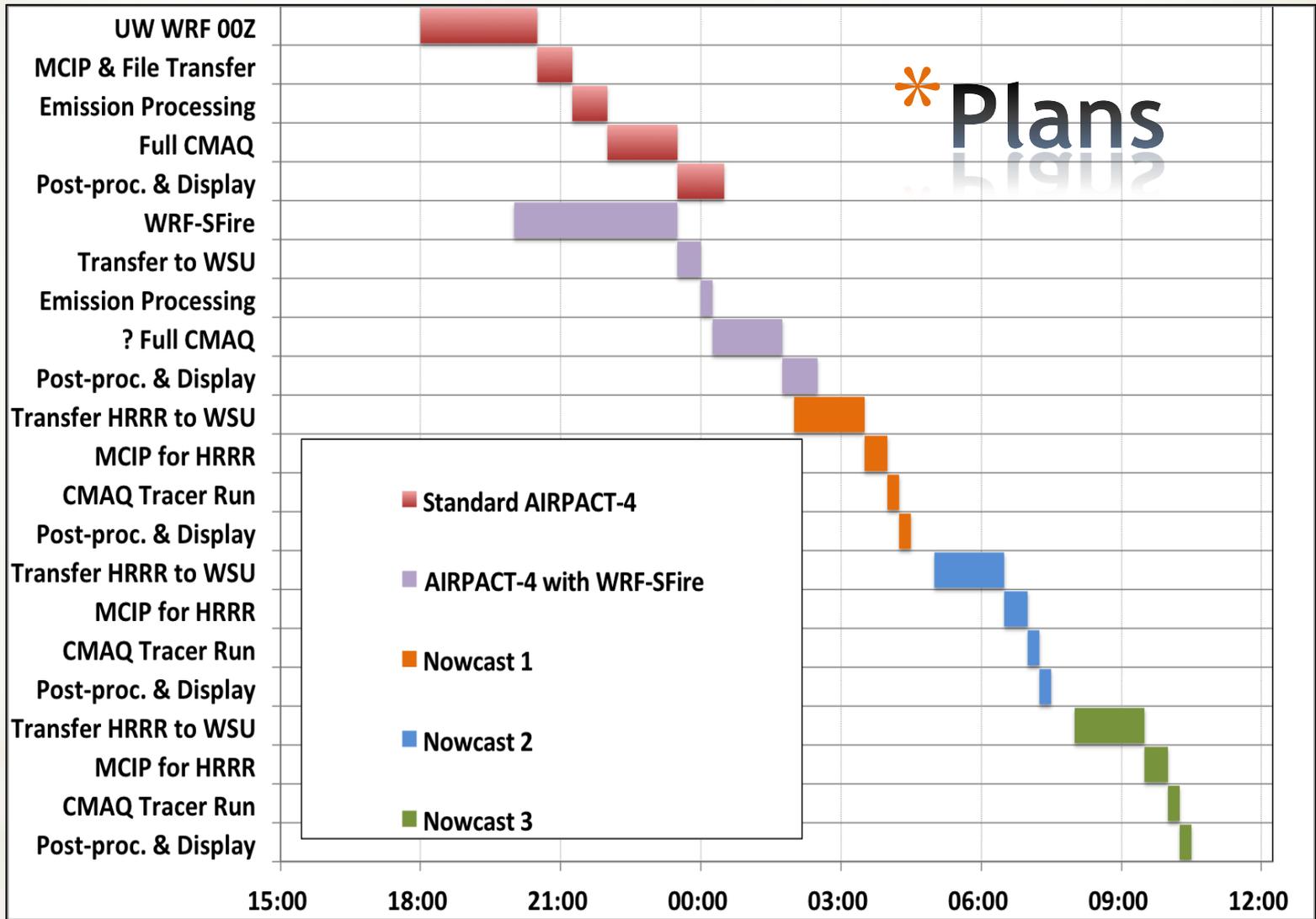


Figure 3. Proposed daily cycle of forecast and nowcast runs.

- * AIRPACT5 has replaced AIRPACT-4.
- * Discussing with Pius Lee at NOAA issues on access to NOAA NAQC system data for WRF NOAA HRRR met and NAQFC-derived BCON...
- * WRF-SFire activities/progress:
 - * Adam Kopchanski and Mary Ann Jenkins at Utah are applying WRF_Sfire to the Grizzly Bear Fire a ?

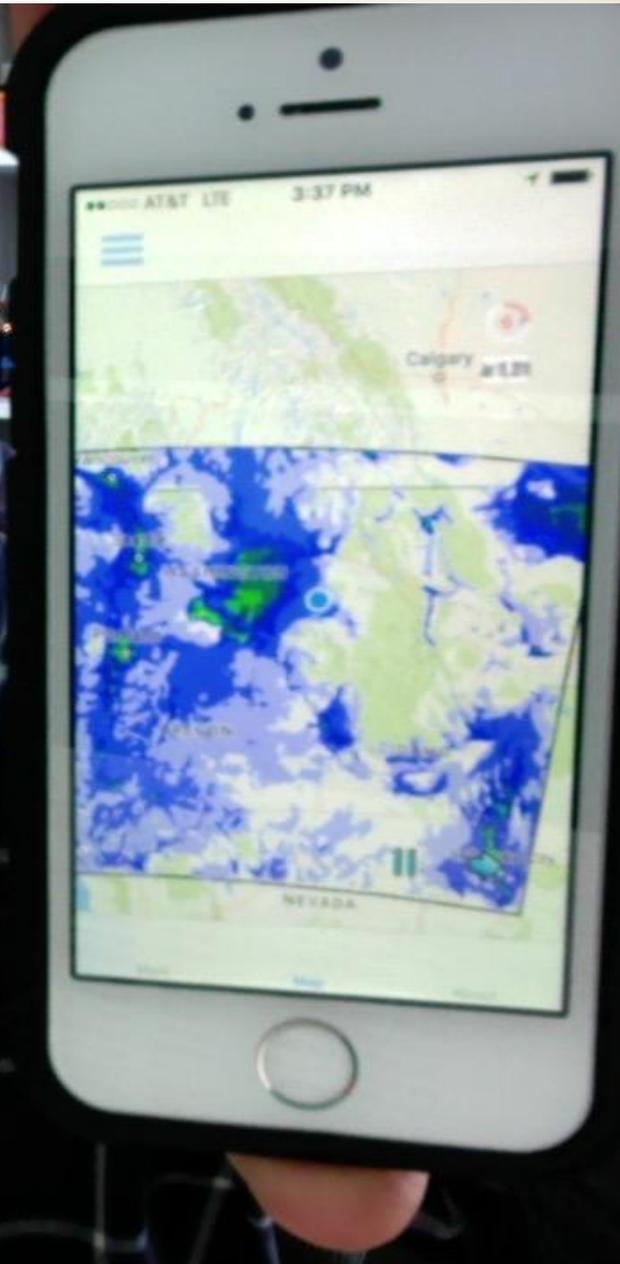
- * Airpact Smartphone apps (beta) completed for Android and iPhone, now being updated and made available for testing (talk to Joe).

* Recent Progress

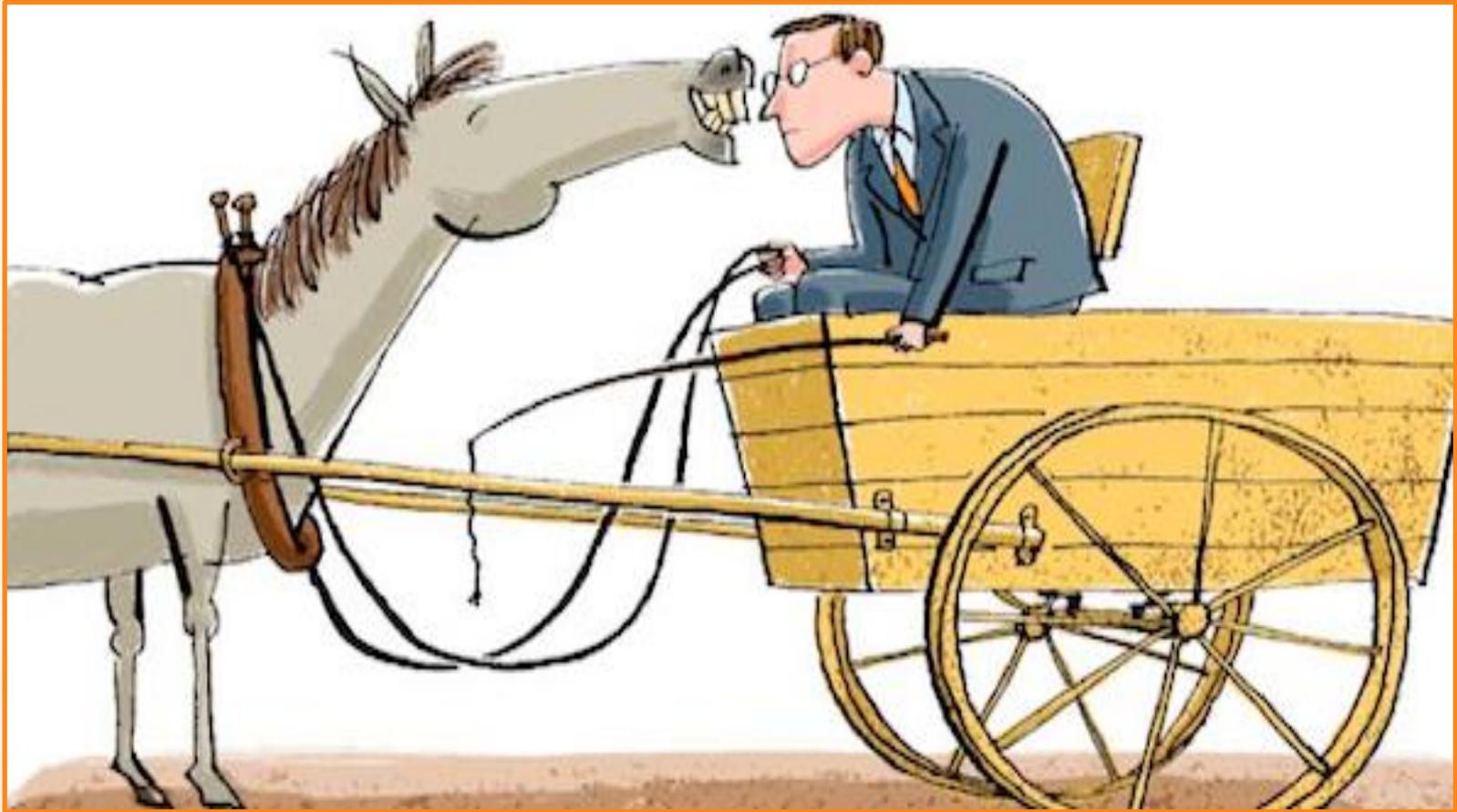
Airpact Smartphone apps (beta) completed for Android and iPhone.

Since this snapshot, the iOS updates have apparently broken the iOS AIRPACT app!

Interested in testing the Android or iPhone version for us and providing feedback?



* Recent VR App work...



- * Test VR App with willing & friendly users (FLM employees in field offices in Class I areas?), so....
- * Solicit NW-AIRQUEST and JFSP (John Cissel) for possible Visual Range App and Co-laboratory participants?

*** Need to do next for
App & Co-laboratory**

*NW-AIRQUEST and NW Lung Association supported our proposal with letters.

***Thank You**