



**Helicopter Emergency
Medical Services
(HEMS) Tool @
www.AviationWeather.gov**

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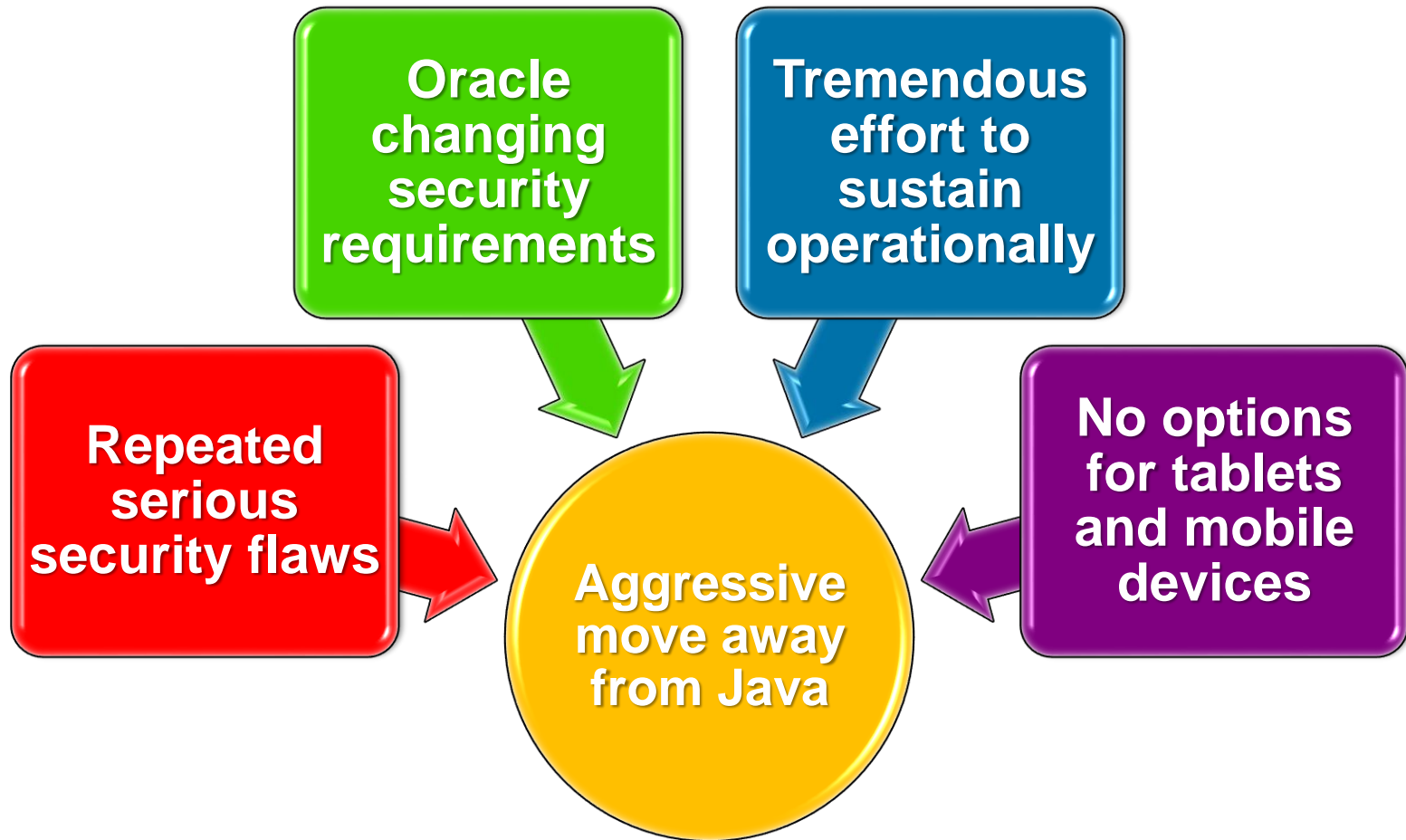
August 2016

HEMS Tool Overview



- Meets the needs of low-altitude emergency first responders
- Overlay multiple fields of interest: ceiling, visibility, flight category, winds, relative humidity, temperature, icing, satellite, radar, AIRMETs and SIGMETs, METARs, TAFs, and PIREPs
- All 3-D data are interpolated to AGL altitudes and can be sliced horizontally on 1000 ft. intervals up to 5000 ft. (all data can be animated); Data is time synchronized to go back/forward 6 hours
- High-resolution base-maps from ESRI (colored relief & satellite); more detail is revealed when zooming in
- Preferred views can be saved for quick recall later and automatically update with current data

Replacing Java



HEMS Tool Implementation



- **Current State:**

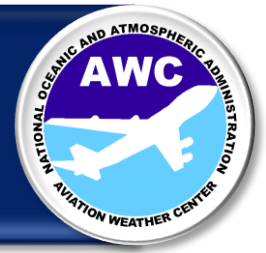
- “Frozen” since late July 2015
- May tweak user interface to mimic the Java application
- Plan to fix several issues with the tool – employing functionality residing on our new *Experimental Graphical Forecasts for Aviation* webpage
- Some of these changes already available for the HEMS Tool at: <http://new.aviationweather.gov/hemst>
 - added 500' increments to the level selector
 - will work on the back end processes to add more graphics to the display
 - added map legend to view the legend in full screen mode

HEMS Tool: Adding Data

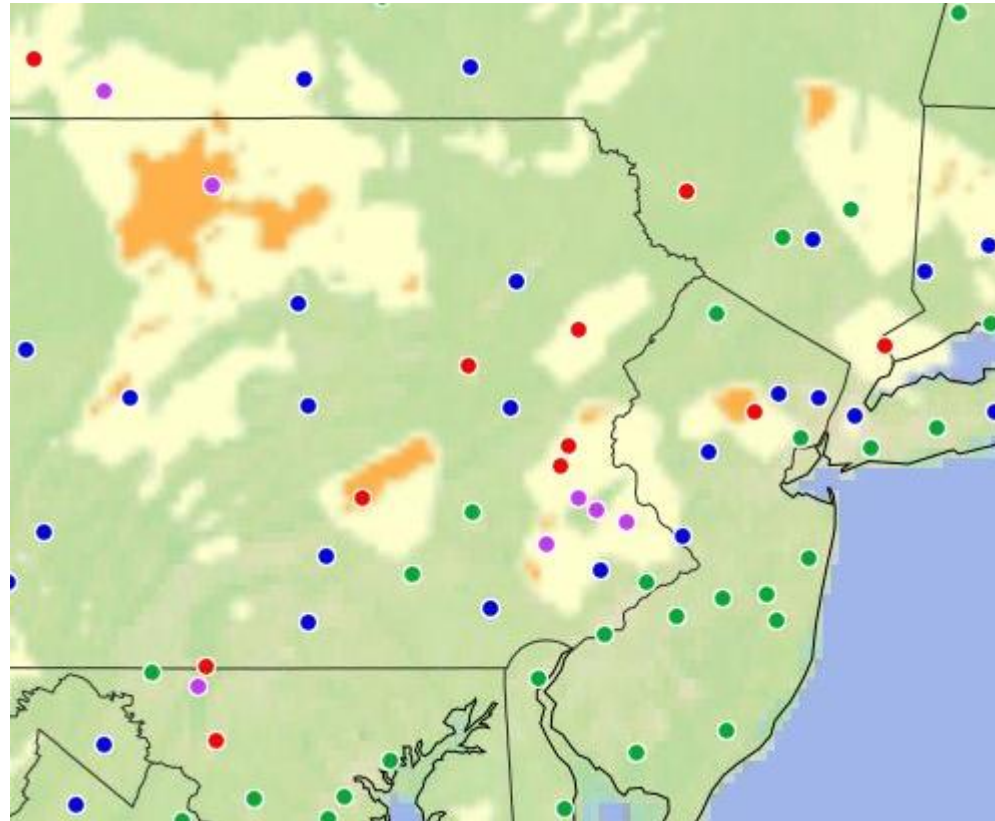


- **METAR network too sparse:**
 - Pilots need more surface observations
 - Investigating ways to incorporate Meteorological Assimilation Data Ingest System (MADIS) data
 - Density of network and reliability of observations present challenge
- **OpenLayers advantages:**
 - Easily allows addition of data from external sources
 - Can roll out new functionality more quickly than with Java
 - Add “non-standard” forms of geo-spatial data
- **FAA/NWS C&V enhancement project:**
 - Will improve Real-Time Mesoscale Analysis (RTMA)
 - Better Ceiling & Visibility analysis and ultimately improved forecasts

HEMS Tool: Improvements

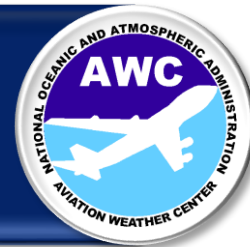


- **CVA Plot:**
 - Analysis generally not well-received, but is produced every 5 minutes
 - Relies mostly on simplistic objective interpolation of METAR data; doesn't do well in mountainous areas
 - Can miss relatively large areas of IFR
 - Goal is to ultimately use RTMA or AWC-developed algorithm for C&V analysis



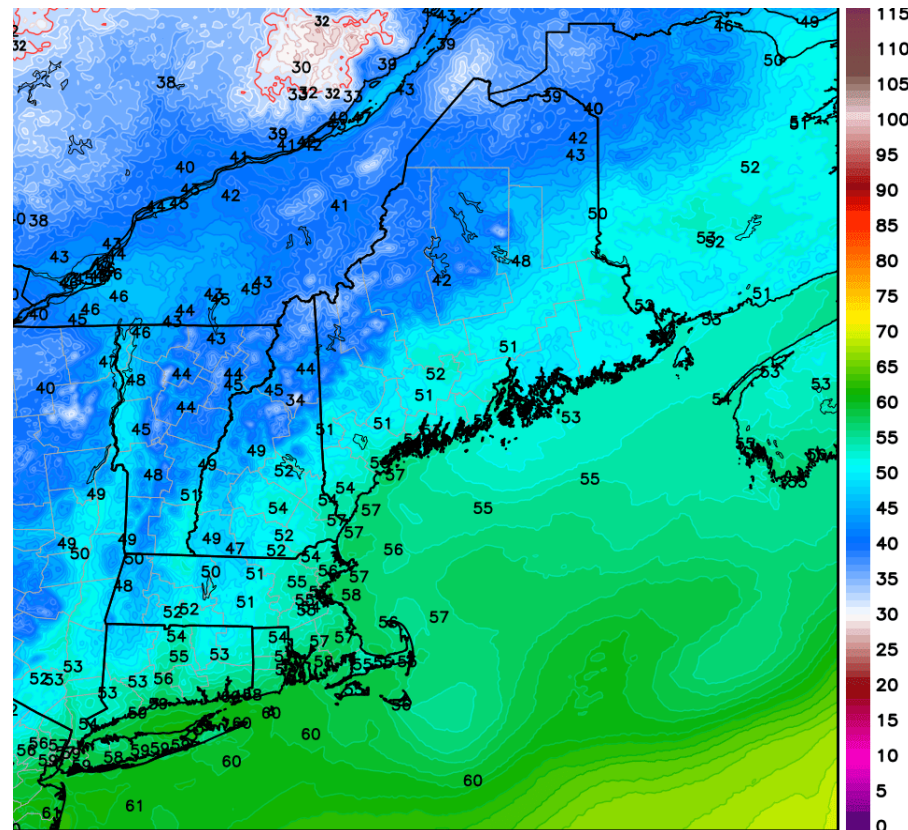
Ceiling and Visibility Analysis

HEMS Tool: Improvements



- **LAMP vs RTMA:**

- LAMP does not capture all scenarios – it handles fog, but not always lower cigs/vsbys due to precipitation
- LAMP is interpolated from GFS MOS data points – so it's easier to miss lower cigs/vsbys
- LAMP also has about 30 minutes of latency, is somewhat coarse and degraded



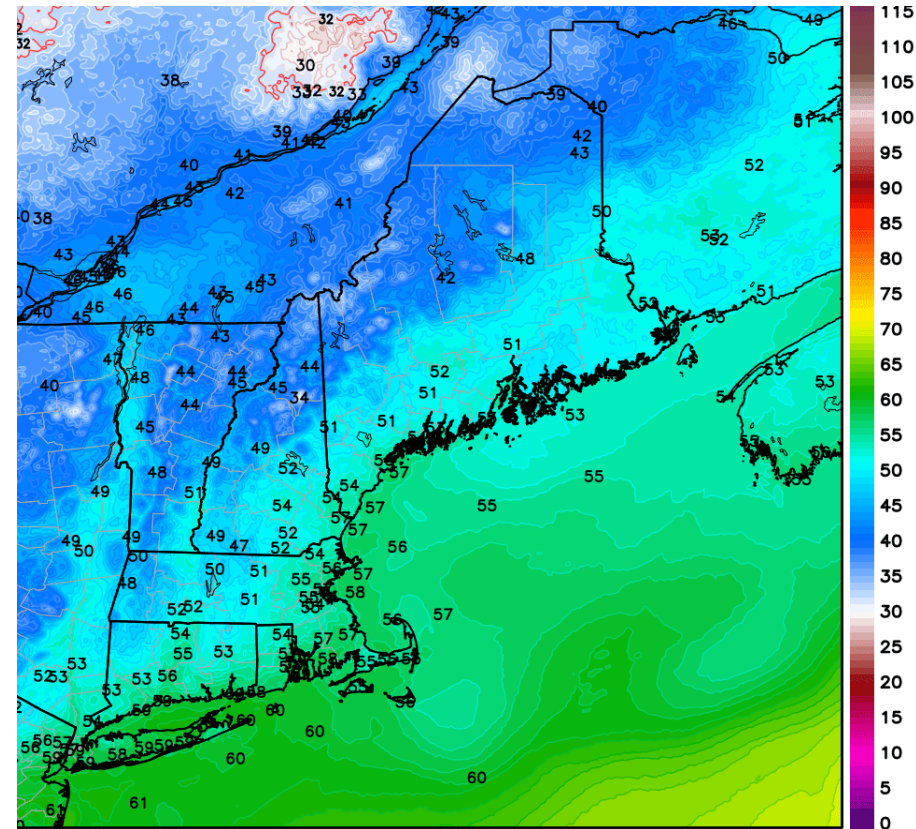
RTMA Analysis

HEMS Tool: Improvements



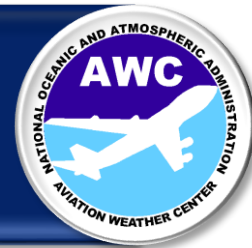
LAMP vs RTMA:

- RTMA has latency issues as well: in the past was about 90 minutes, now down to 50 minutes
- Ultimately RTMA will be completed every 15 minutes
- At least another 9 months until RTMA development will have reached a point for consistent use in HEMS
- Until RTMA is ready, will first use LAMP since its analysis is deemed to be more accurate than CVA



RTMA Analysis

HEMS Tool: Improvements



- Increase back-end processing time
- Re-write of how data is processed
- Implement some of the cosmetic changes repeatedly requested by users
- Need feedback from users
 - Send comments directly to Mike.Bettwy@noaa.gov or Dan.Vietor@noaa.gov
 - Or use “Feedback” link on webpage

