WEATHER IN THE CONNECTED COCKPIT
NBAA 2016

CONNECTING THE BUSINESS AND PLEASURE OF FLYING®
Providing two global solutions based on communications needs

Integrated for complete global coverage

Enabling a full suite of weather solutions for operators
Panasonic Weather Solutions

Creation of a Better Weather Forecast

275+ PWS Sensor Equipped Commercial Aircraft

Iridium Global Data-Link Communication System

PWS Super Computers

4D Data Assimilation & High Resolution Weather Forecasting Models

Custom Weather Products & Expert Meteorologists
State-of-the-art Atmospheric Data Acquisition

Weather Balloons

- 80+ yr. old weather balloon technology
- 91 locations in North America
- 2x daily soundings (12 hours apart)
- High latency reporting (2–4 hrs.)
- Inaccurate lat / lon position data

PWS – TAMDAR (patented)

- TAMDAR atmospheric sensor
- 275+ aircraft in North America, Europe and Asia
- Continuous soundings
- Real time reporting (no latency)
- GPS-based date/time/position data
- ~2,500 soundings per day
AirMap
Aircraft Tracking and Integrated Messaging
Panasonic Weather Solutions

**Flight Optimization**: Advanced wind forecast data powering industry-leading flight optimization programs enabling lower fuel costs and reduced CO₂ emissions. These forecast winds are used for calculating optimized ascent and descent profiles, which are sent directly to the cockpit, and can also be used for enroute flight optimization.

**AirMap Weather**: Enhanced high-resolution aviation forecasts overlaid on a common user interface with Panasonic’s satellite communications, voice, data, aircraft messaging and tracking solutions. AirMap is an ideal ground-based solution for operator awareness of the entire equipped fleet.

**4DAero**: Electronic Flight Bag (EFB) hazardous situational awareness and avoidance application, including flight plan overlay. 4DAero enables pilots to have increased situational awareness and efficiency.

**4D WeatherCast**: Panasonic’s superior global weather forecasting technology is based on our patented TAMDAR weather sensing technology, unique data assimilation algorithms, weather modeling, and expert meteorological analysis, providing more accurate and higher resolution forecasts wherever aircraft operate.
4DAero - Weather Forecast Display Operations and EFBs
Thank you
3 KEY ELEMENTS

**FLIGHTLINK COMMAND UNIT**
- Satellite communications management
- ARINC standard installation
- Aircraft data processing & routing

**TAMDAR WEATHER SENSOR**
- 4D raw weather data collection
- Worldwide operational sensor network

**MULTI-FUNCTION ANTENNA**
- Single or dual Iridium poles
- Dedicated GPS
Northeast “Blizzard?” (26-27 Jan 2015)

PWS forecast was more accurate than other models and forecasts.

Table of average forecast snowfall total starting 48 hours in advance of storm

<table>
<thead>
<tr>
<th>City</th>
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<th>NAM-12</th>
<th>NWS</th>
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<td>25-30</td>
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</tbody>
</table>


Before
“crippling and potentially historic blizzard” with 20 to 30 inches of snow, “locally higher amounts possible”

National Weather Service

After
“We recognize the need to work harder and smarter to produce better forecasts and to better communicate forecast uncertainty and manage expectations.”