

# The Weather Company Turbulence Auto-PIREP System

22 June 2016



# The Weather Company Aviation Business

- Formerly known as WSI
- Proven 35+ year track record serving mission critical airline needs
- Currently serves 140 airlines globally
- Primary focus on commercial aviation
- Also serves ANSP, military business and general aviation segments



**An essential platform for safe, efficient and on-time flight operations**

## The Turbulence Challenge

**Turbulence incidents  
costs airlines millions  
of dollars in crew  
injuries, maintenance  
costs and lost revenue.**



# The Turbulence Challenge

Crew or  
passenger  
turbulence  
injuries

**Red:** 6 or  
more injuries

**Yellow:** 5 or  
less injuries

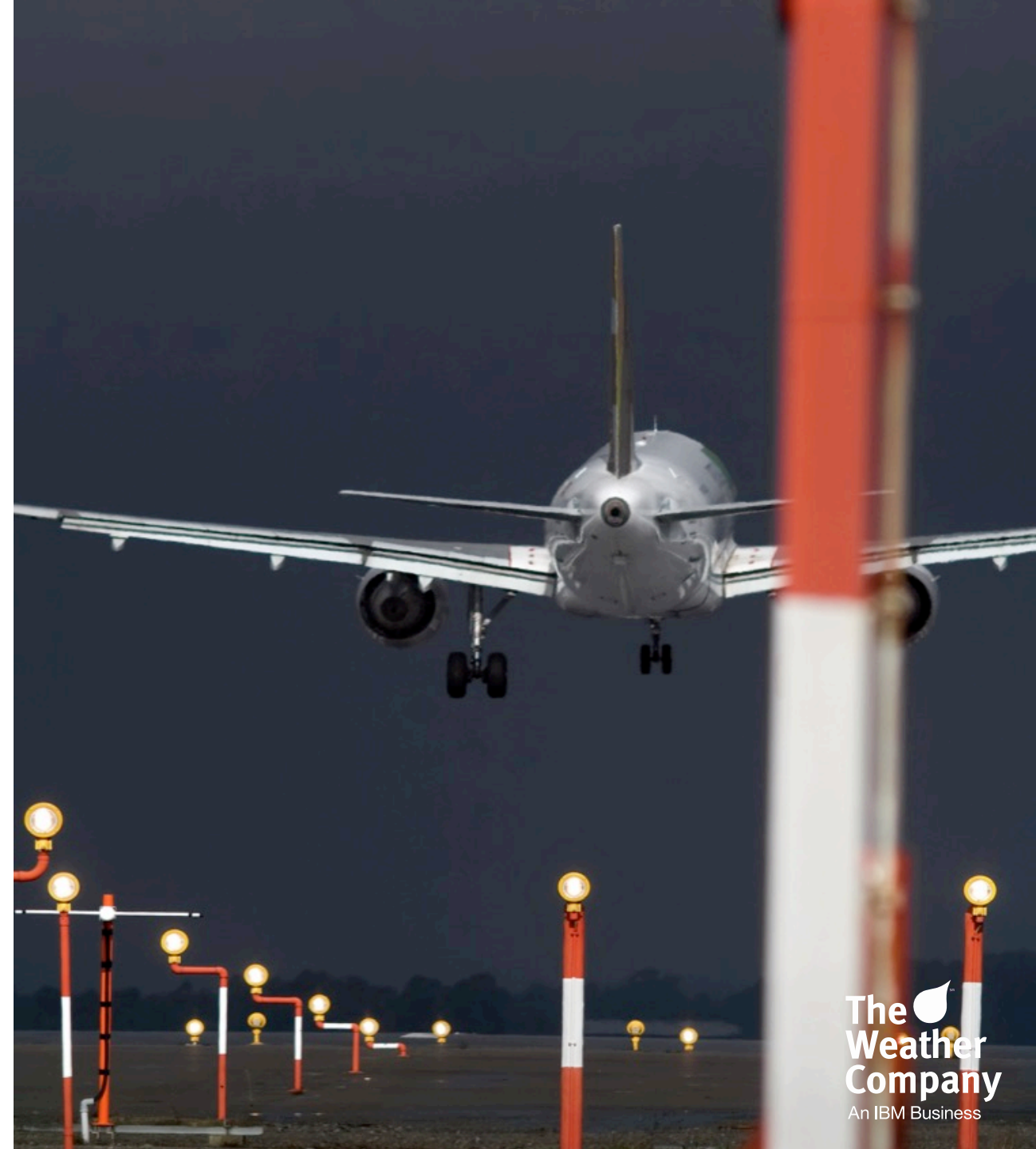


# WSI Total Turbulence

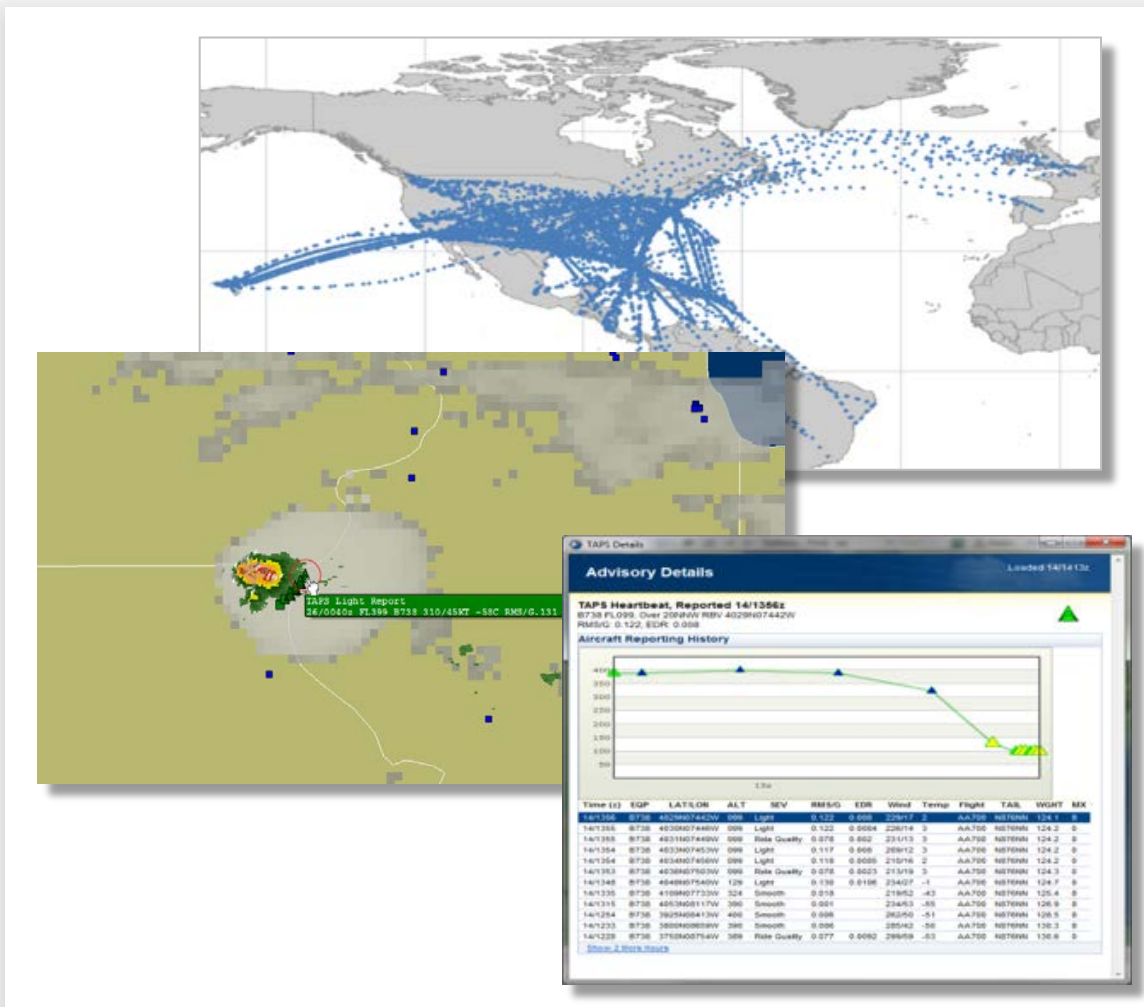
WSI Total Turbulence delivers a proven end-to-end solution for detecting and avoiding turbulence.

## WSI Total Turbulence:

- Objectively measures turbulence from aircraft in real-time.
- Offers industry exclusive high-density coverage over key North American and East Asia routes.
- Delivers precise forecasts of turbulence for the next 24 hours.
- Delivers actionable turbulence alerts throughout all phases of flight.



# WSI Turbulence Auto PIREP System (TAPS™)



Developed in partnership with AeroTech Research, NASA and validated on commercial aircraft

Referenced as preventative measure via FAA AC 120-88A

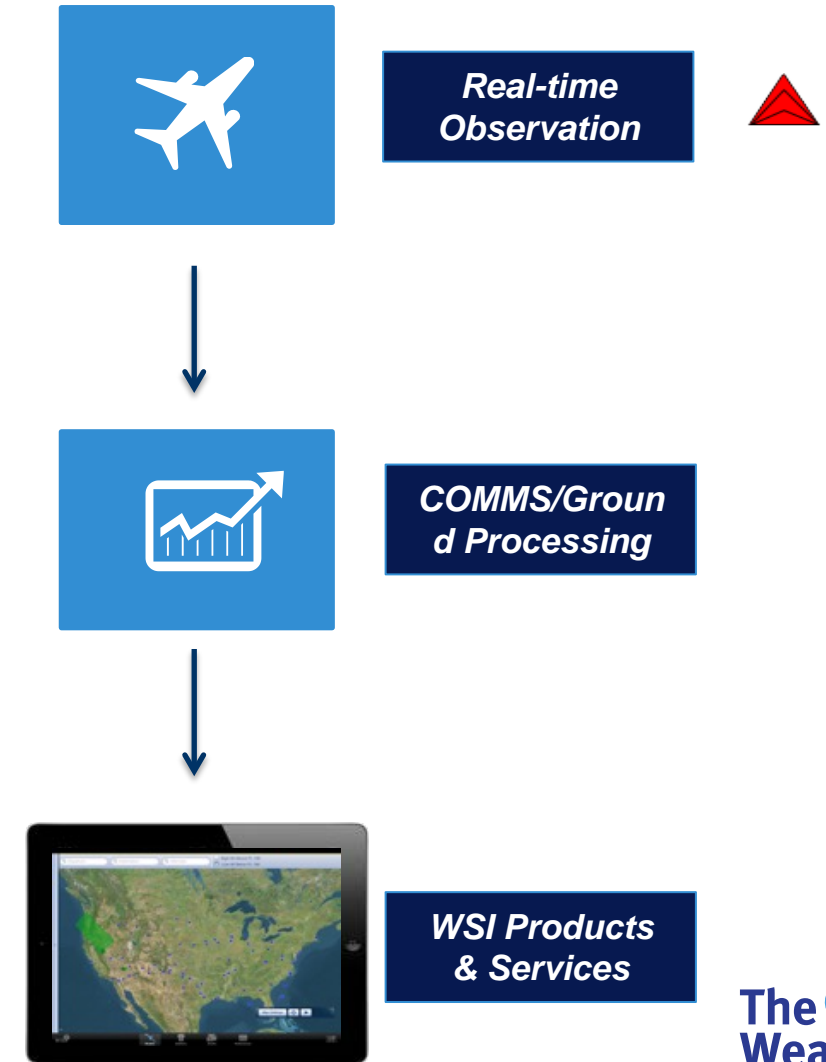
Automates the reporting of aircraft encounters with significant turbulence and severe loads based on certain g-load thresholds

Sent via ACARS, 1kb msg, 80 event msg/mo

Over 600 aircraft equipped today

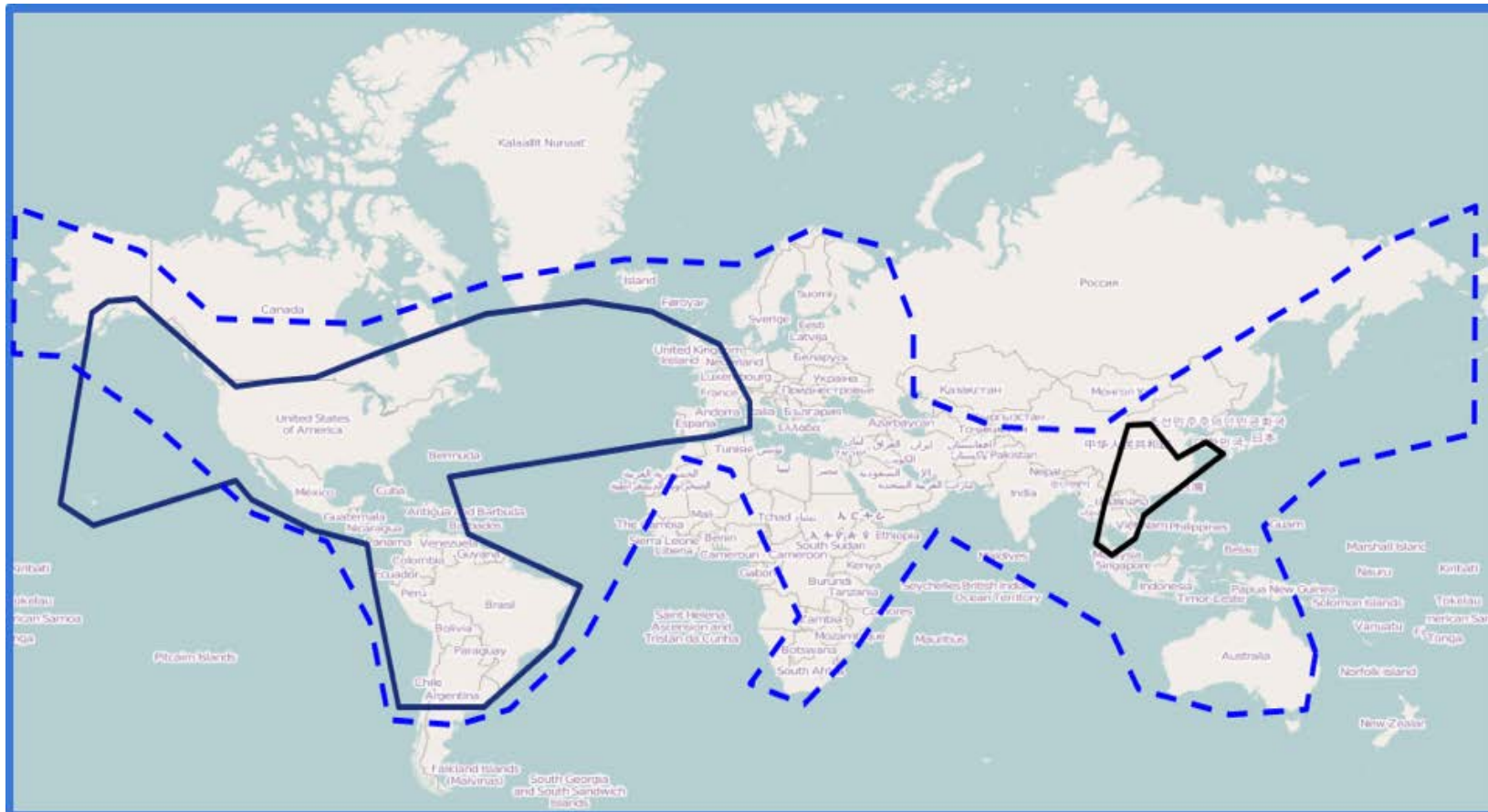
# WSI Turbulence Auto PIREP System (TAPS™)

- Supports Industry Standards
  - RMS-G (FAA TSO-C63d)
  - EDR (ICAO Annex 3)
- Accelerometer-Based Algorithm
  - Developed out of NASA research
  - Same source used by DFDR
- Automated Quality Control
  - Detect avionics fault
  - Can automatically notify MX



# WSI Turbulence Auto PIREP System (TAPS™)

## TAPS CURRENT FOOTPRINT



Current Reporting  
Area

2015 - 2016  
Improved Area

### Note

- Alert and forecast effective areas will be larger as additional data is used, e.g. PIREPS and weather models.
- WSI Graphical Turbulence forecast are global



# WSI Total Turbulence

## END TO END SOLUTION

### Benefits:

Improved Safety

Reduced  
Maintenance Costs

Reduced Operating  
Costs

Reduced  
Environmental  
Impacts



Turbulence Detected



Weather Platforms



Data Archive



Global Forecast Model



Turbulence Forecast  
and Advisories



Turbulence Alerting



# WSI Total Turbulence

Customer Results

**Significant Reduction in Flight Attendant Injuries**

**Year over year reduction in maintenance inspections**

**Captains accepting higher planned flights**

**Decrease in turbulence encounters**



# Going Forward

Expand Network Internationally  
and into BA Market

Develop Federal Partnerships  
for access to the data

THANK YOU

