



Turbulence
Aware

Facilitating industry shift
to data-driven turbulence
mitigation

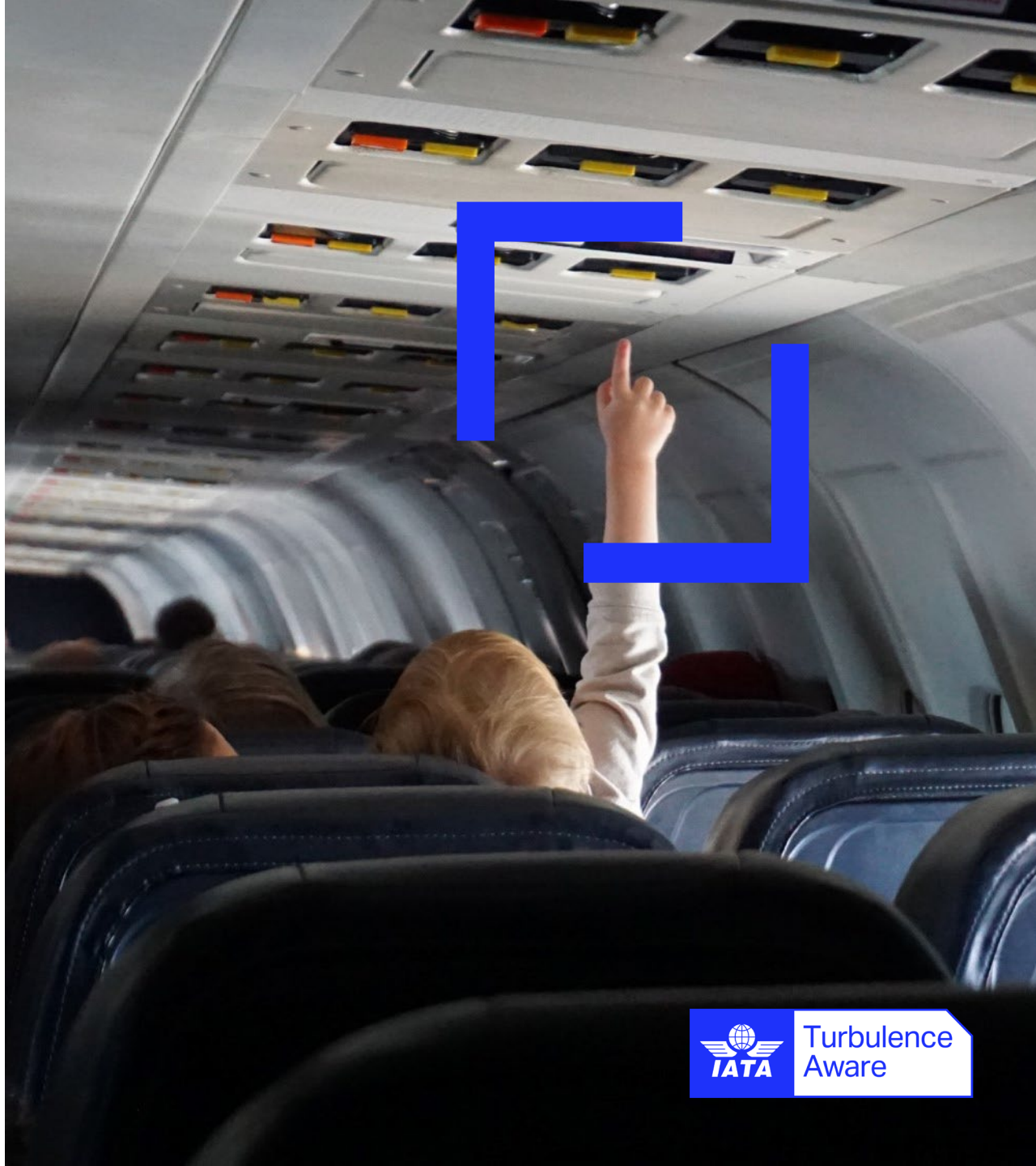


Turbulence is

The leading cause of injuries to cabin crew and passengers in non-fatal accidents (FAA)

Costing the aviation industry hundreds of millions of dollars every year

Causing brand damage and contributing to the fear of flying



Current tools :

Pilot Reports (PIREPS) are **Subjective**

Forecasts may be **inaccurate** and **hours old**

Weather radar **cannot detect clear air turbulence**



149%

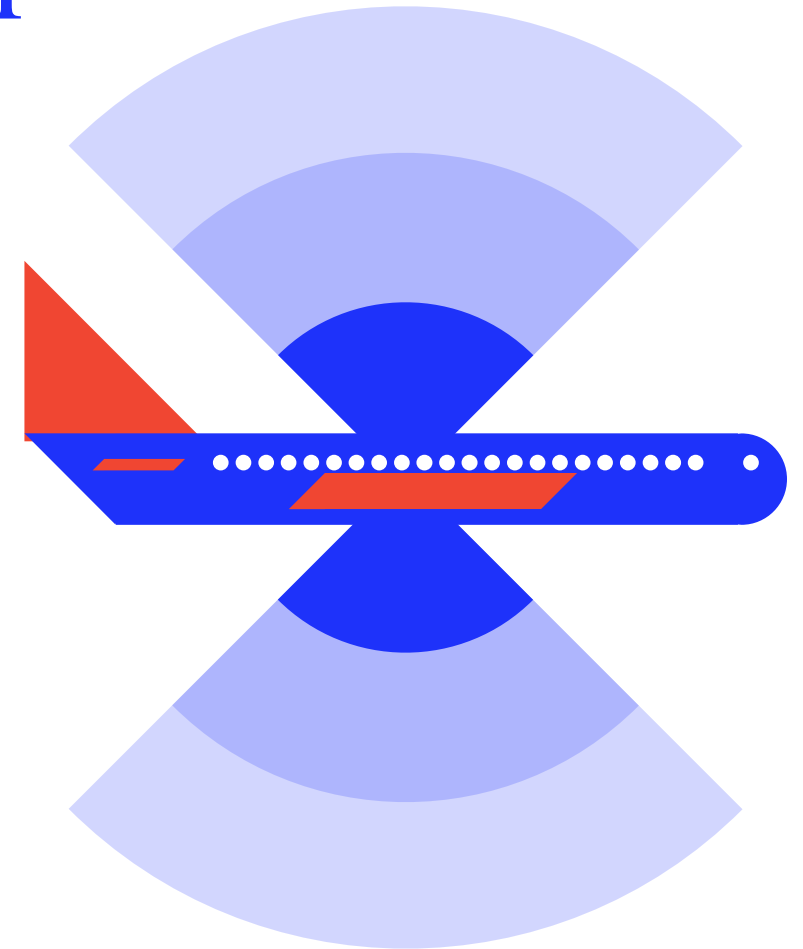
The projected increase
in the frequency of
severe turbulence *



*Williams, 2017

Industry shift to data-driven turbulence management

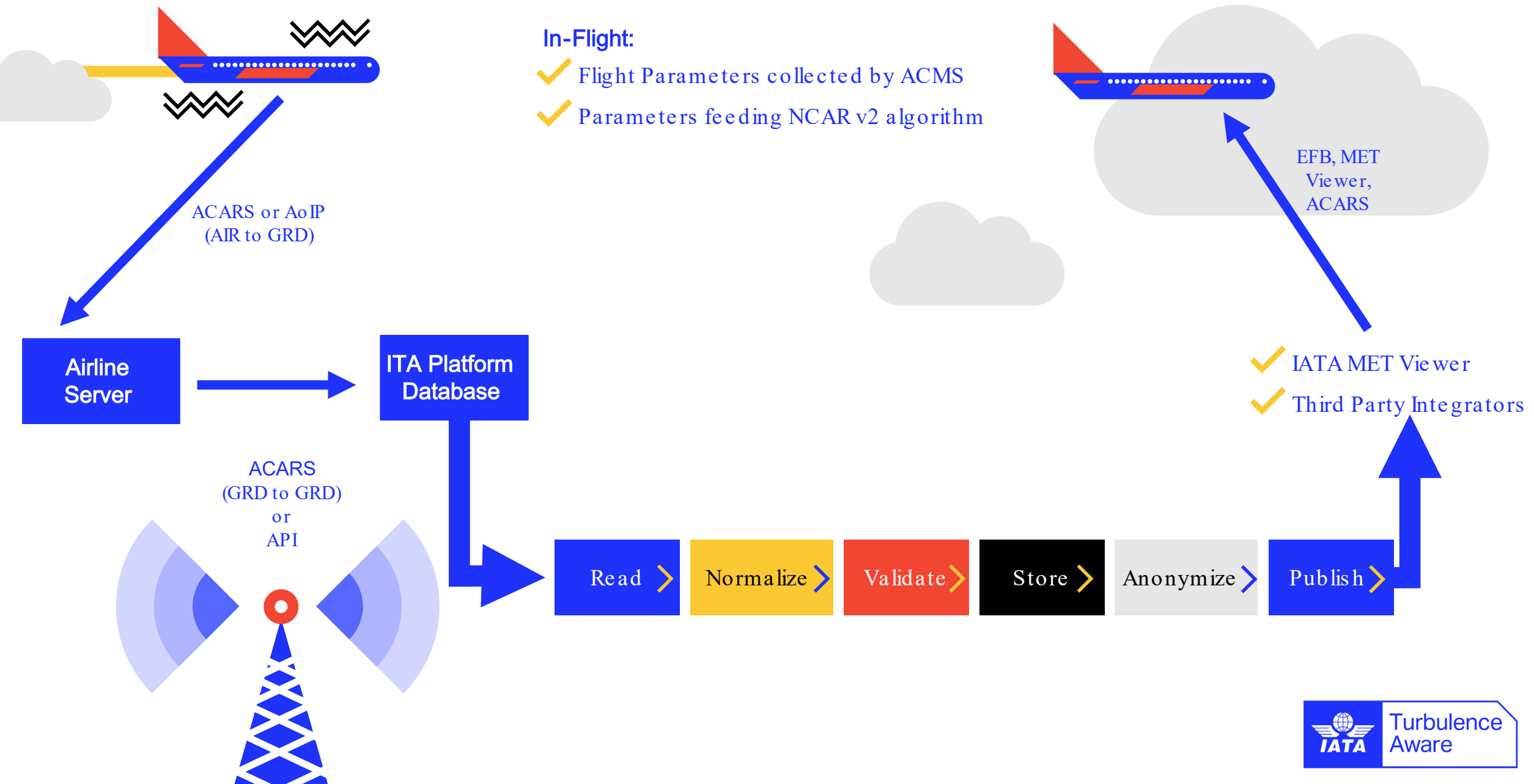
Recent technical advancements now enable aircraft to accurately calculate the turbulence state of the atmosphere in flight



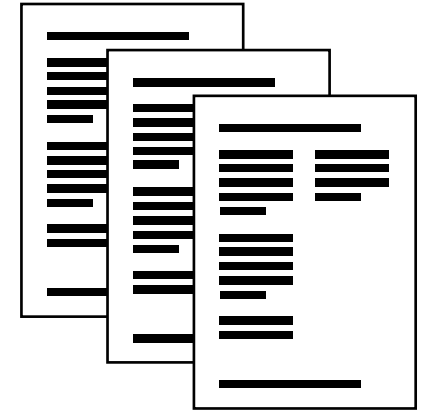
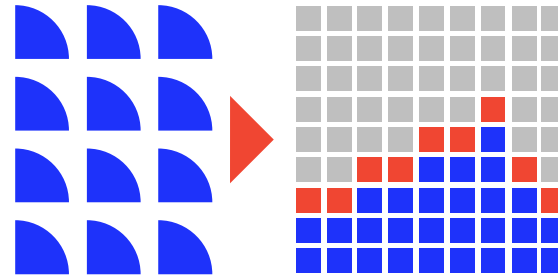
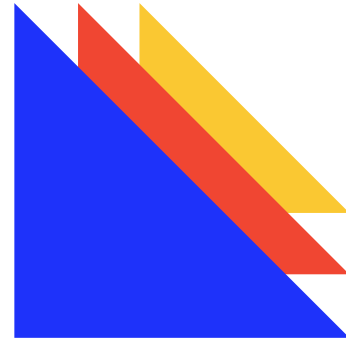
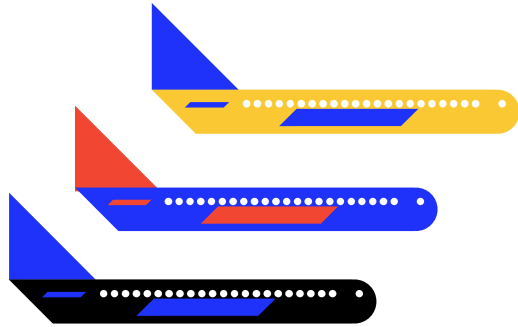
What is real-time turbulence data?

Eddy Dissipation Rate (EDR)

- Turbulence intensity metric measuring the **state of the atmosphere** around an aircraft in flight
- It is the **ICAO standard** for aircraft measure and reporting for clear-air turbulence
- An **aircraft independent** absolute value
- Simple **software installation** based on NCAR v2 open-source algorithm
- **No hardware** required to calculate EDR



IATA Turbulence Aware in figures



2000 +

Reporting Aircraft

21

Airlines feeding
data to the Platform

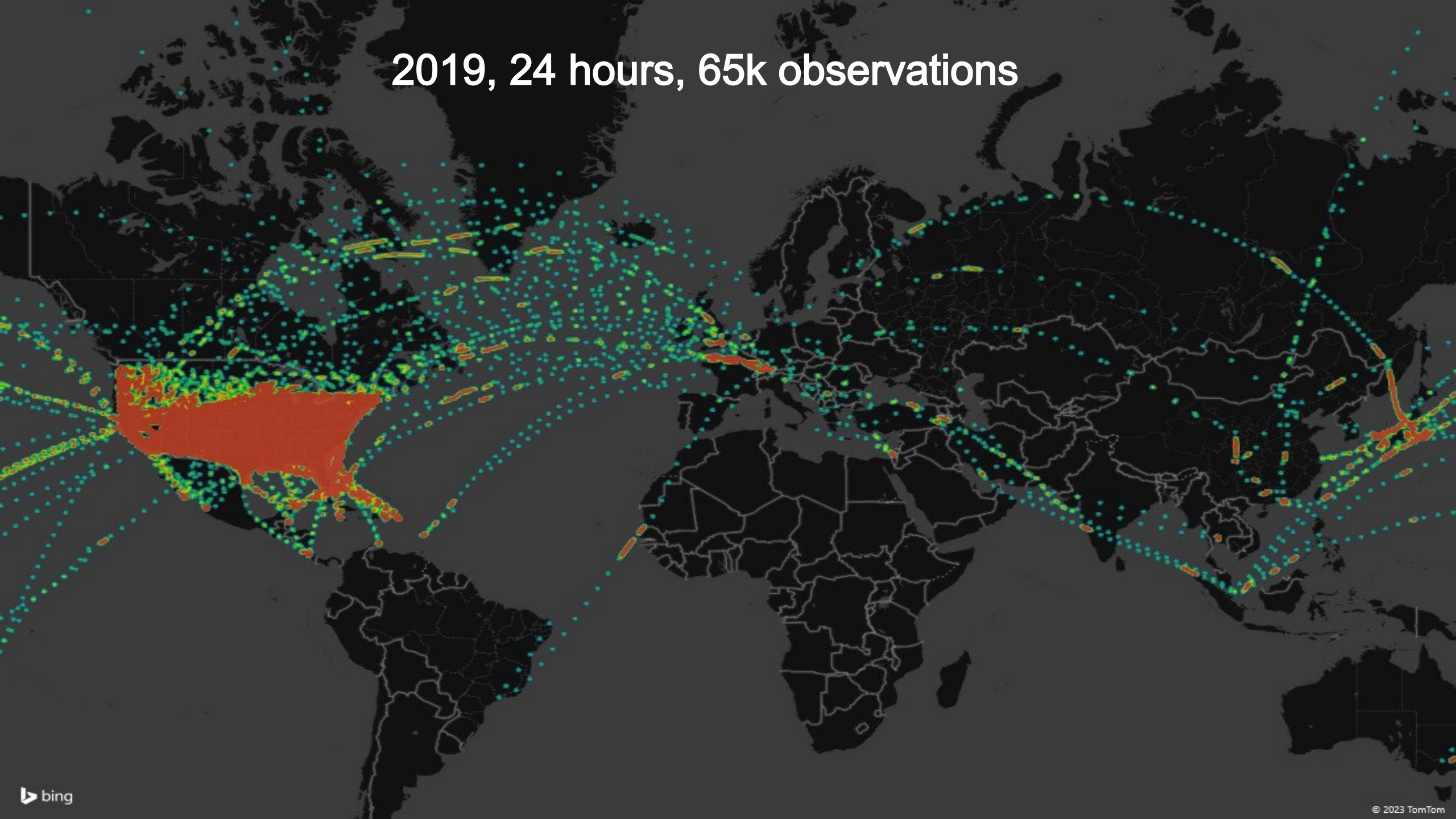
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Service Providers
signed to **integrate**
data

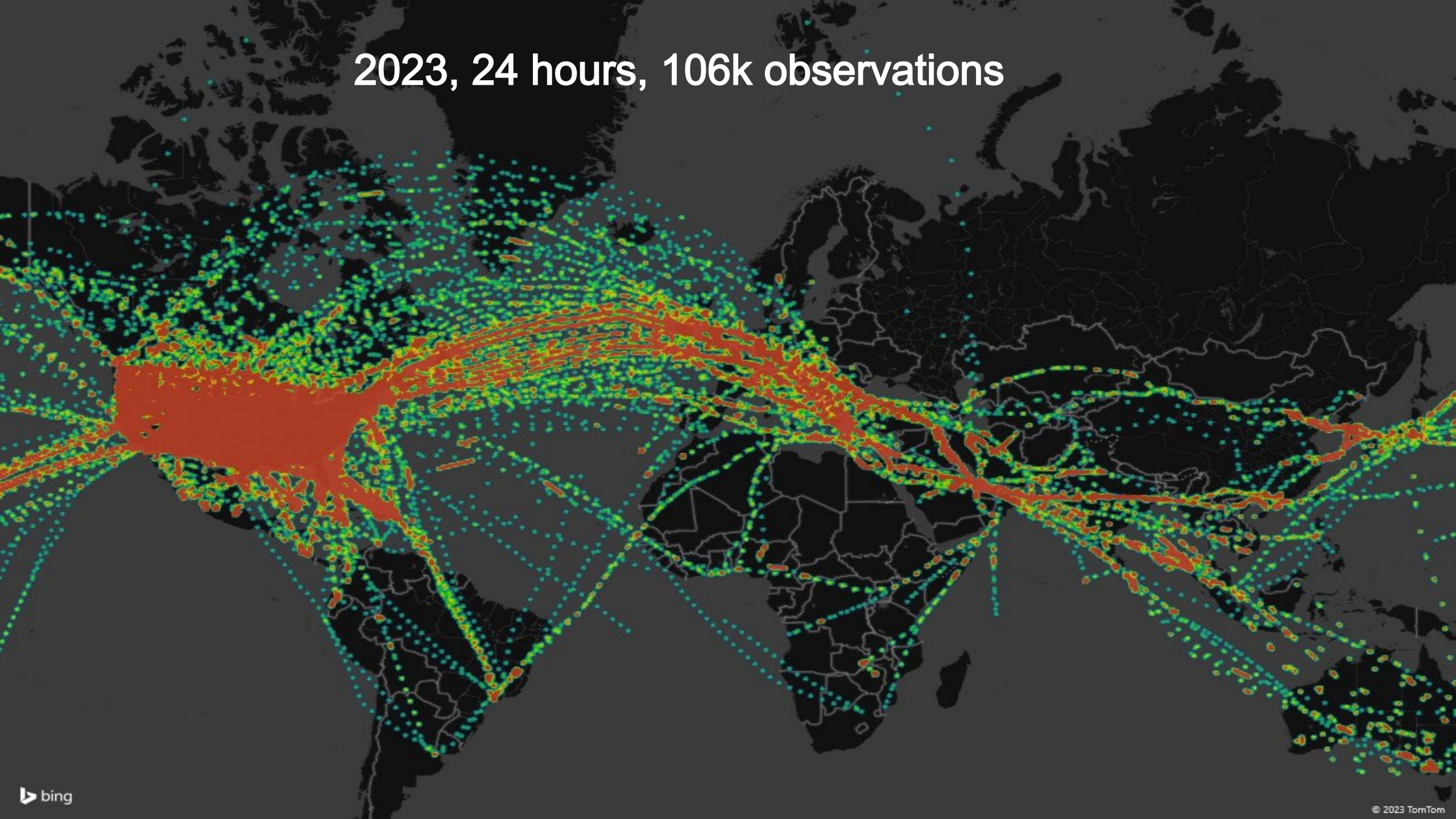
100 + M

Turbulence Reports
received

2019, 24 hours, 65k observations

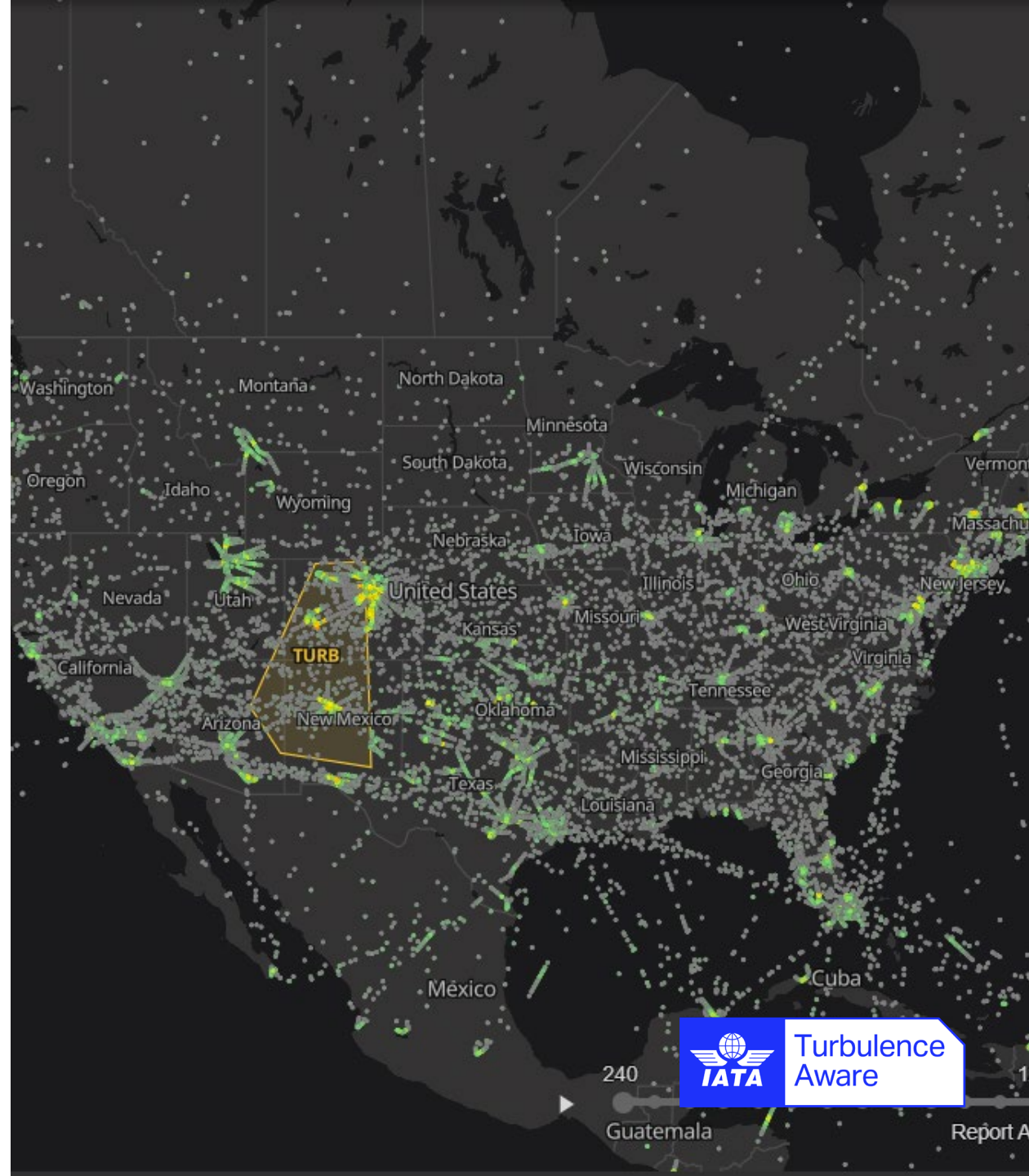


2023, 24 hours, 106k observations



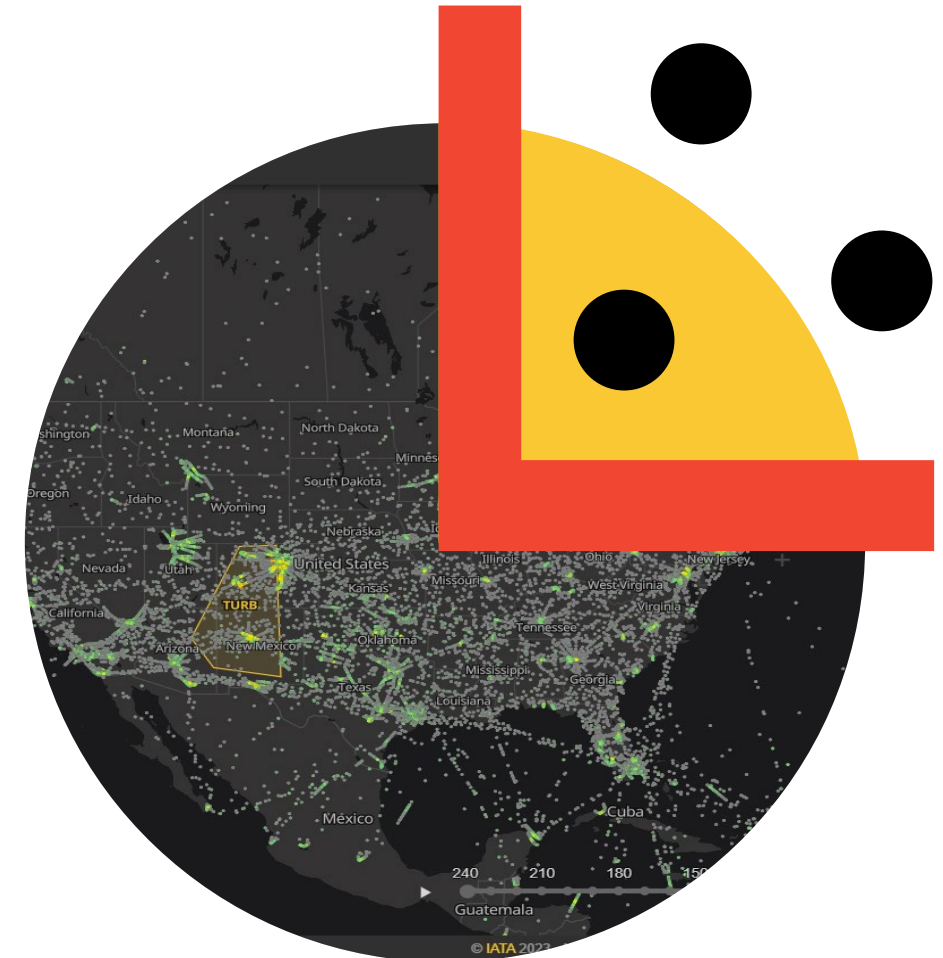
IATA Turbulence Aware offers access to live and historical wind, temperature and turbulence data (*EDR) to support research and meteorological organizations with their demand for turbulence and MET data.

(*Eddy Dissipation Rate

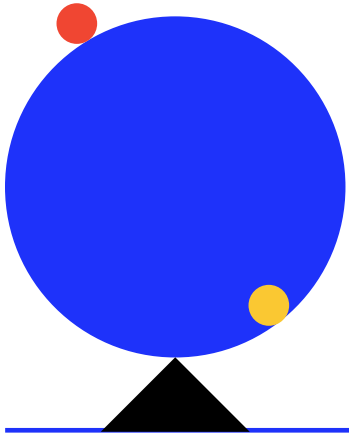


Use Cases:

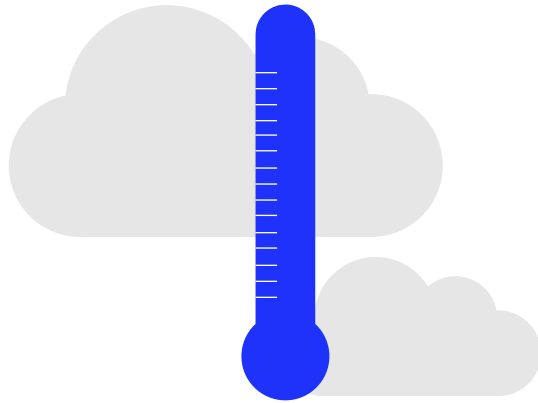
- Turbulence and SIGMETs Modeling Validation
- Turbulence Model Development
- Turbulence and Weather Research Activities
- Access to the same raw turbulence data as pilots for better operational decisions
- Analysis of areas / altitudes / flight levels to better manage traffic flow and airways
- ATCs no longer need to congest the airways requesting ride reports



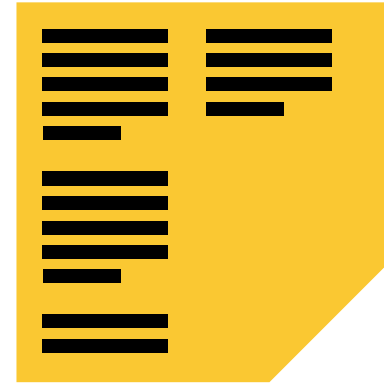
Available data:



Live Global
Turbulence
Coverage



Wind and
Temperature
Data



Historical
Data Archive
in CSV format

Parameters delivered for each report listed below:

Parameter	Explanation	Example
Observation Time	Time of report in UTC	2020-05-13t00:00:00Z
Altitude	Altitude Above Sea Level in feet	35,000 ft
Latitude	Geographical coordinate of the report for latitude	22
Longitude	Geographical coordinate of the report for longitude	120
Peak EDR	Maximum EDR value in the calculation	0.37
Mean EDR	Average EDR value of the calculation	0.12
Wind Speed	Wind speed in knots	40kt
Wind Direction	Wind direction in radial degrees	270°
Static Air Temperature	Temperature in degrees Celsius	-55.0° C

Contact:

IATA **TURBULENCE** @IATA.ORG

