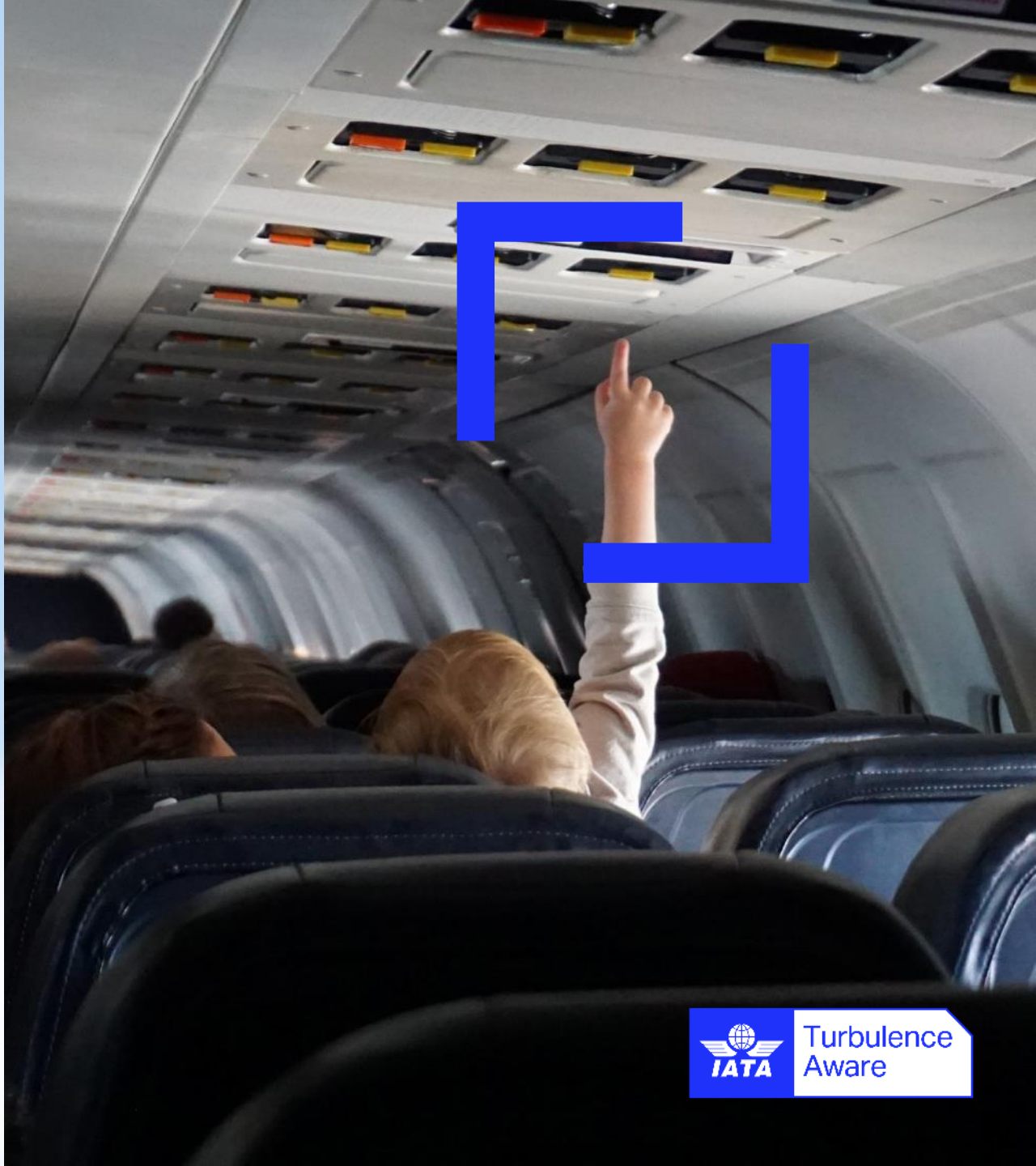

IATA
Turbulence Aware
Facilitating industry shift to data-driven turbulence mitigation

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*

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*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

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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

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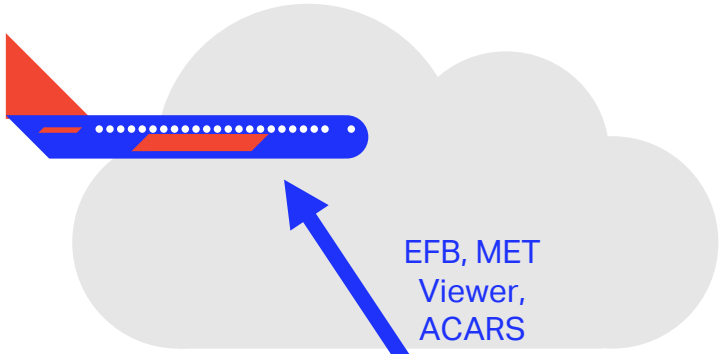
ACARS or AoIP
(AIR to GRD)

In-Flight:

- ✓ Flight Parameters collected by ACMS
- ✓ Parameters feeding NCAR v2 algorithm

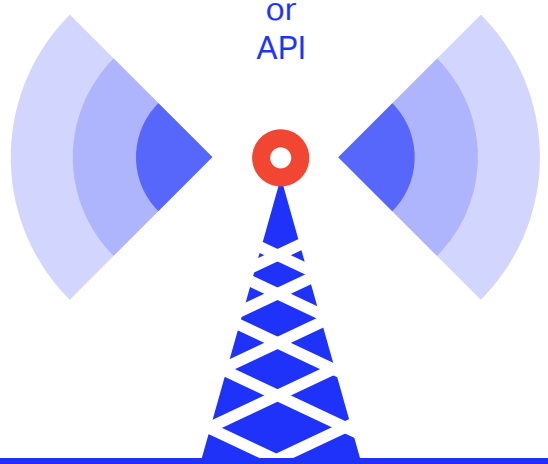


EFB, MET
Viewer,
ACARS

Airline Server

ITA Platform Database

ACARS
(GRD to GRD)
or
API



Read › Normalize › Validate › Store › Anonymize › Publish

- ✓ IATA MET Viewer
- ✓ Third Party Integrators

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IATA Turbulence Aware in figures

2700+

Reporting Aircraft

27

Airlines feeding data to the Platform

12

Service Providers signed to **integrate** data

180+ M

Turbulence Reports received

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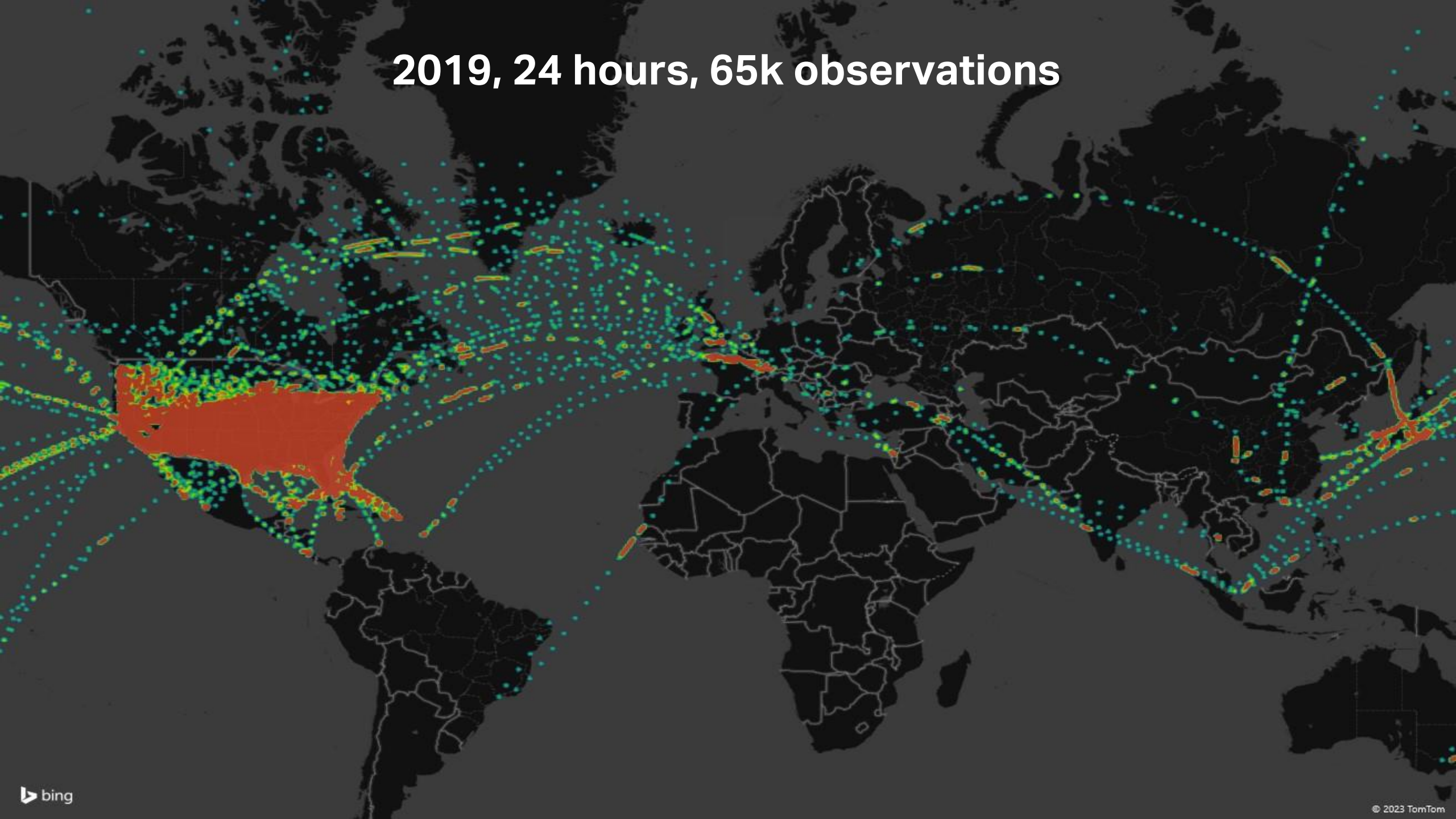
2019, 24 hours, 65k observations
bing
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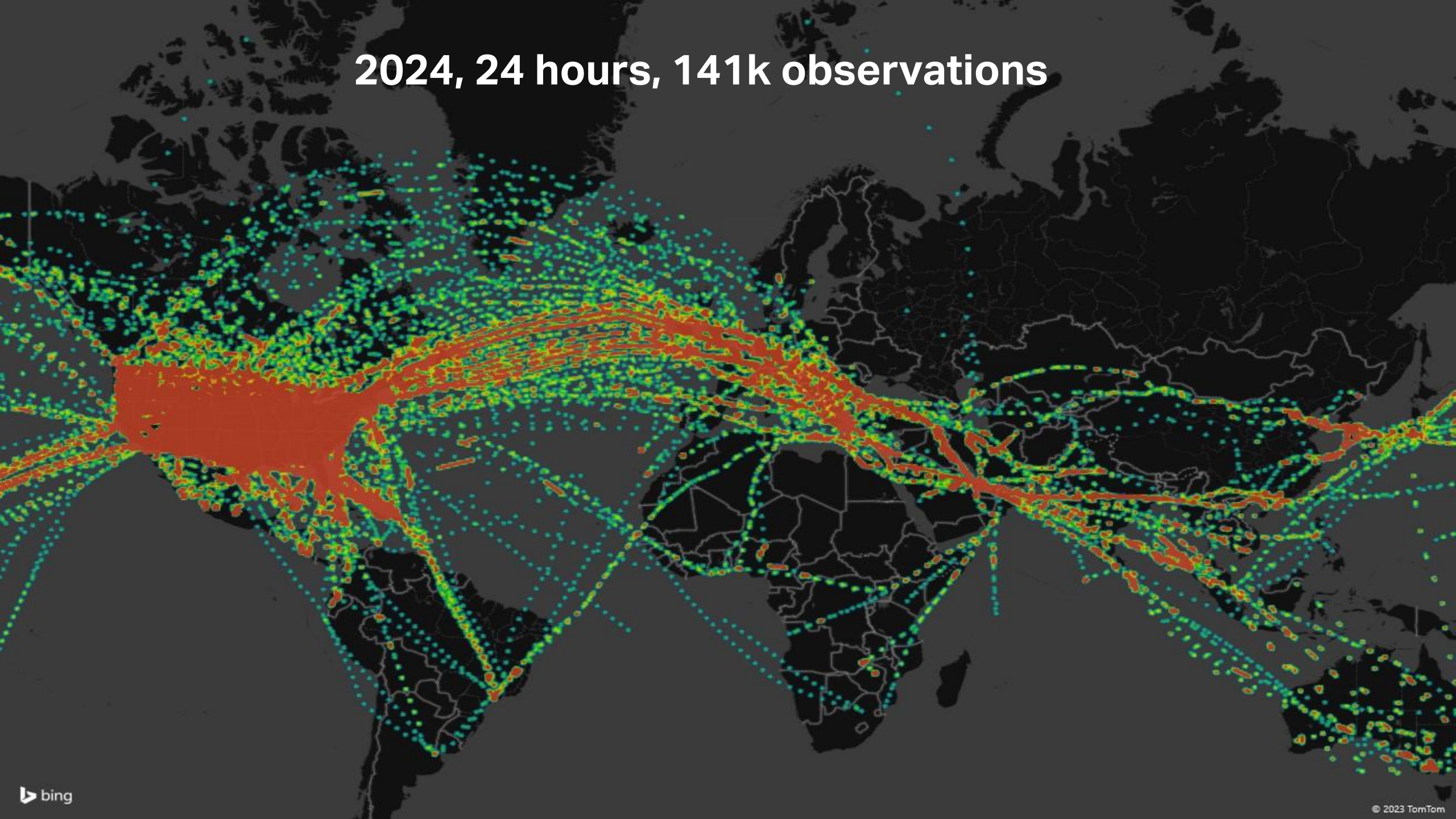
2024, 24 hours, 141k observations
bing
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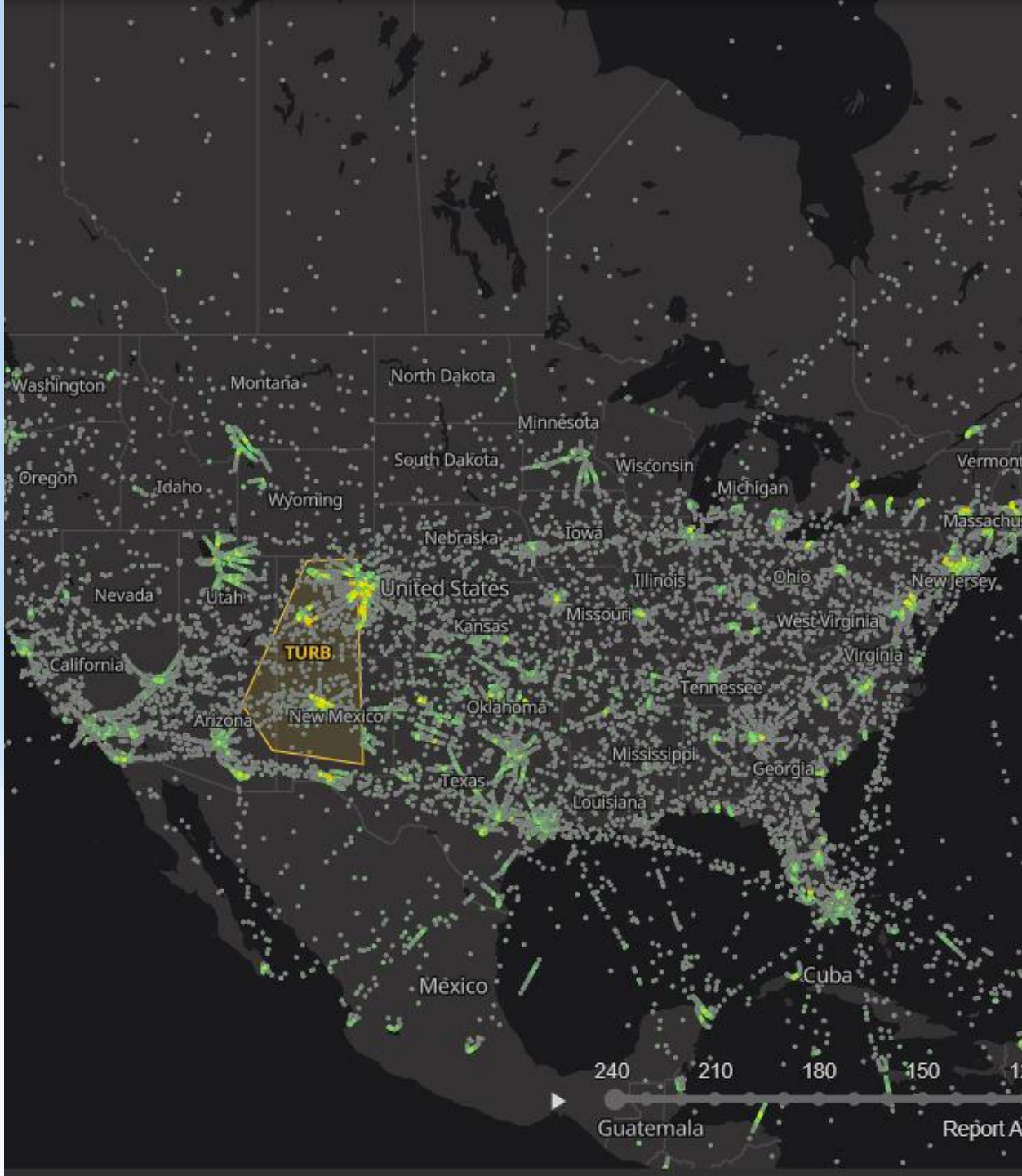
IATA Turbulence Aware offers access to live and historical wind, temperature and turbulence data (*EDR) to support research and meteorological organizations with their demand for turbulence and MET data.



(*) 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

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Use Cases:

- Proactive management of air traffic flow
- Dynamic management of air traffic sectors
- Optimization of airspace usage
- Informed decisions and improved coordination between airlines, ATS and ATFM units
- Enhanced flight planning
- More accurate advisories and warnings
- Cross-FIR coordination during adverse weather

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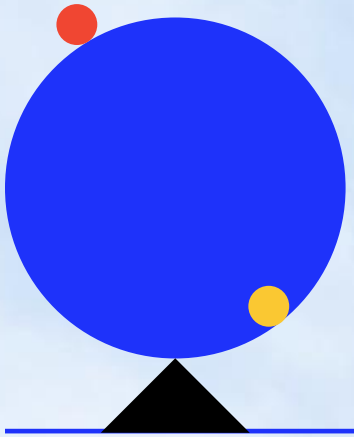
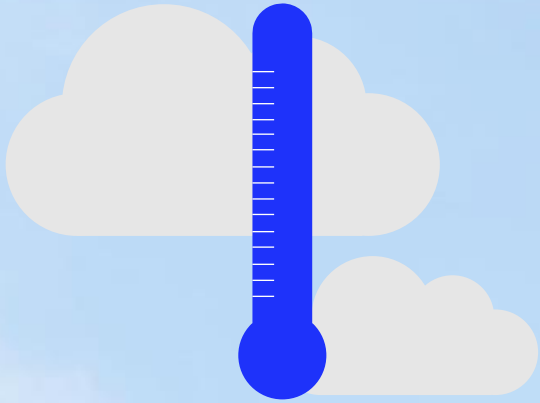
Available data:



Live Global Turbulence Coverage



Wind and Temperature Data

Historical Data Archive in CSV format

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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

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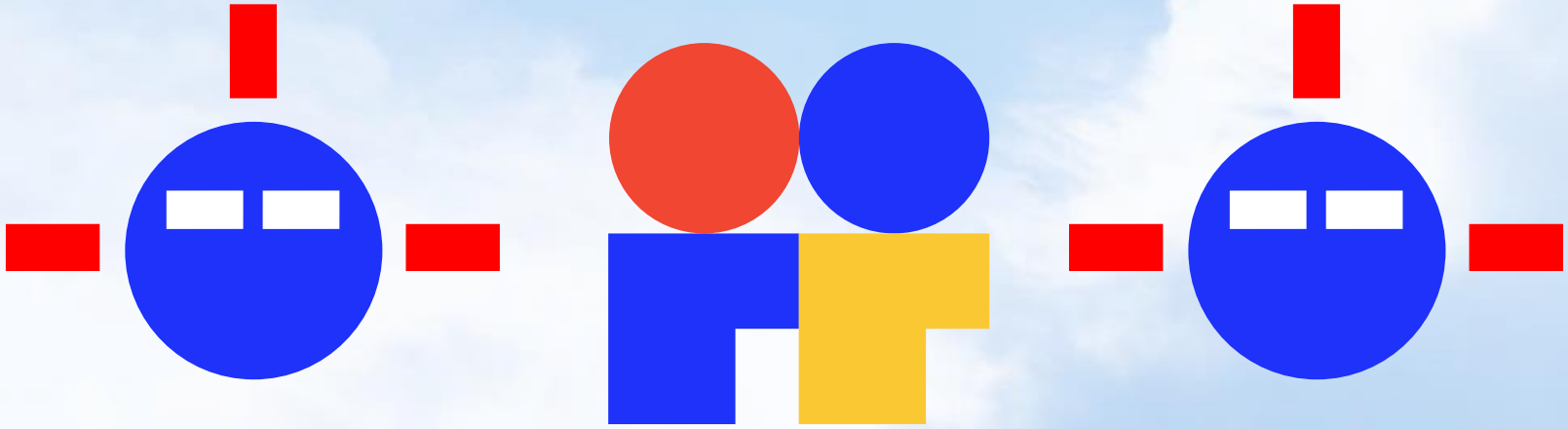
Safer journey for
1.2+ billion PAX
since product inception



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