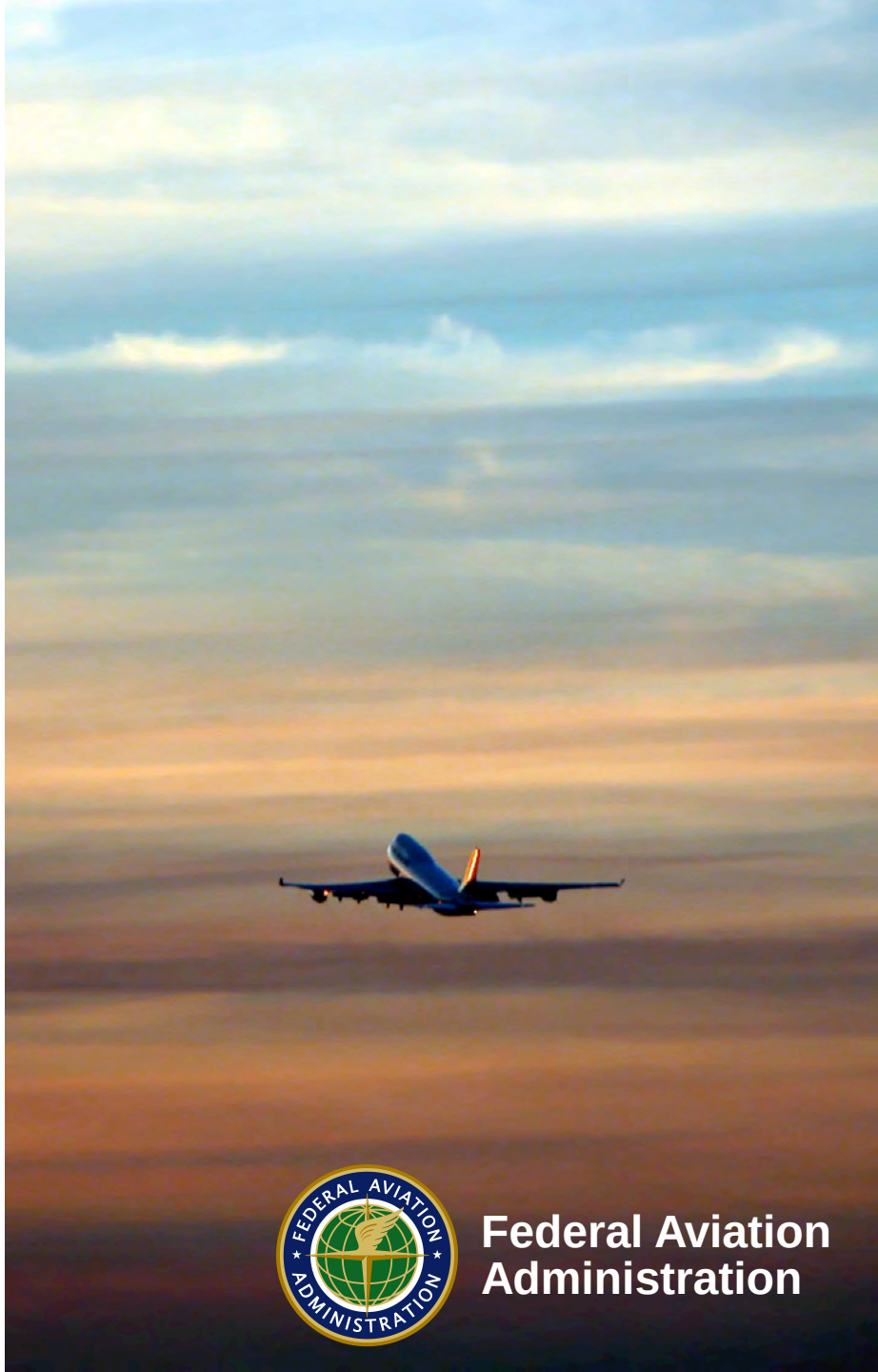
Improved Turbulence Predictions Using ADS-B Vertical Rate Data



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By: Ahmad Usmani

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Background

- **The FAA has been researching techniques to use existing avionics outputs to derive *objective* turbulence data**
- **Significantly greater number of turbulence observations without any aircraft or datalink modifications**
- **Observations at altitudes and locations flown by general aviation (GA) and business aviation as well as commercial aircraft**

Process

- **Single algorithm for all aircraft types**
- **Lookup tables used to scale outputs to account for variances in aircraft type, size, and flight dynamics**
- **Output is a state of the atmosphere measured in Eddy Dissipation Rate (EDR)**

Implementation

- **Output will be integrated into turbulence nowcasts to improve their performance, especially for general and business aviation aircraft**
- **Output/nowcasts will be disseminated to U.S. National Weather Service (NWS), FAA, and industry**
- **Interagency agreement with NWS will enable data distribution to industry partners through their Commercial Data Providers program**
- **In parallel, the FAA Weather Program will research integrating the ADS-B VR derived turbulence observations into a new version of the Graphical Turbulence Guidance Nowcast (GTG-N) product**
- **Beta testing in August-September 2026**
  - Beta testers may include Garmin, Collins, Delta, and United