



Air Ambulance Quality and Patient Safety Committee (AAQPS Committee) Meeting

Flight Safety Subcommittee Terms and Definitions

This document provides definitions for key flight safety terms related to air ambulance and aims to equip AAQPS Committee members and the general public with the necessary background and insights to guide the May 8, 2025, meeting.

- “The terms ‘**Advanced Air Mobility**’ and ‘**AAM**’ mean a transportation system that moves people and property by air between two points in the United States (U.S.) using aircraft with advanced technologies, including electric aircraft, or electric vertical takeoff and landing aircraft, in both controlled and uncontrolled airspace.” (Source: Advanced Air Mobility Coordination and Leadership Act (P.L. 117-203, 136 Stat. 2227) Available at [Text - S.516 - 117th Congress \(2021-2022\): Advanced Air Mobility Coordination and Leadership Act | Congress.gov | Library of Congress](#))
- “The **Airport Data and Information Portal (ADIP)** is the FAA's centralized platform that streamlines the collection, validation, and management of airport data. It offers transparency into airport aeronautical information and enables authorized users to manage data specific to their airport.” (Source: ADIP.faa.gov Available at: [Airport Data and Information Portal](#))
- “ADS-B stands for **Automatic Dependent Surveillance – Broadcast**...ADS-B Out works by broadcasting information about an aircraft's GPS location, altitude, ground speed and other data to ground stations and other aircraft, once per second. Air traffic controllers and properly equipped aircraft can immediately receive this information. This offers more precise tracking of aircraft compared to radar technology, which sweeps for position information every 5 to 12 seconds. Furthermore, radio waves are limited to line of sight meaning radar signals cannot travel long distances or penetrate mountains and other solid objects. ADS-B ground stations are smaller and more adaptable than radar towers and can be placed in locations not possible with radar. With ground stations in place throughout the country, even in hard to reach areas, ADS-B provides better visibility regardless of the terrain or other obstacles. ADS-B In provides operators of properly equipped aircraft with weather and traffic position information delivered directly to the cockpit. ADS-B In-equipped aircraft have access to the graphical weather displays in the cockpit as well as text-based advisories, including Notices to Airmen and

significant weather activity.” (Source: FAA Website, ADS-B Ins and Outs, Available at [Ins and Outs | Federal Aviation Administration](#))

- **Automatic Flight Control Systems (AFCS):** Systems often used by helicopter manufacturers to meet requirements for IFR flight. These frequently fall into six main categories: (1) aerodynamic surfaces, which impart some stability or control capability not found in the basic VFR configuration; (2) trim systems, which provide a cyclic centering effect; (3) Stability Augmentation Systems; (4) Attitude Retention Systems (ATs); (5) Autopilot Systems; and (6) Flight Directors. (Source: Aeronautical Information Manual – Chapter 10 Helicopter Operations. Available at [Helicopter IFR Operations](#))
- “The **B4UFLY** service shows where recreational flyers [flyers who only fly their drone for fun] can and cannot fly... Key features of B4UFLY include information about controlled airspace, special use airspace, critical infrastructure, airports, national parks and military training routes; information about Temporary Flight Restrictions for special events; a clear status indicator that informs the operator whether it is safe to fly or not...; informative, interactive maps with filtering options; the ability to check whether it is safe to fly in different locations by searching for a location or moving the location pin; [and] links to other FAA drone resources.” (Source: FAA Website, B4UFLY resources. Available at [B4UFLY | Federal Aviation Administration](#))
- **Controller-Pilot Data Link Communication (CPDLC)** is part of the Data Communications program. “The Data Communications (Data Comm) program delivers air-to-ground data link infrastructure and applications that enable controllers and flight crews to exchange air traffic control information more efficiently than existing voice communications. Data Comm services enable the transmission of complex instructions that can be quickly and efficiently loaded into an aircraft’s flight management system upon review and acceptance by the pilots.” (Source, FAA Website, Air Traffic Technology, Available at [Data Communication Program \(DataComm\) | Federal Aviation Administration](#))
- “[**Enhanced vision**] EV systems use sensors to provide a better view of the outside world. These aircraft-based sensors use near-infrared cameras or millimeter wave radar to provide vision in limited visibility environments. EV systems can identify terrain in weather, and detect wildlife or other obstructions on the runway.” (Source: FAA General Aviation Joint Steering Committee. Available at [Enhanced Vision Systems](#))
- **FAA-Approved Weather Data.** “Air carriers and operators certificated under the provisions of 14 CFR part 119 are required to use the aeronautical weather information systems defined in the Operations Specifications issued to that certificate holder by the FAA. These systems may utilize basic FAA/National

Weather Service (NWS) weather services, contractor- or operator-proprietary weather services and/or Enhanced Weather Information System (EWINS) when approved in the Operations Specifications. As an integral part of this system approval, the procedures for collecting, producing and disseminating aeronautical weather information, as well as the crew member and dispatcher training to support the use of system weather products, must be accepted or approved.” (Source: Aeronautical Information Manual, Chapter 7: Safety of Flight. Part 1: Meteorology Available at [Meteorology](#))

- **FAA Part 135:** “Charter type services... the FAA grants the authority to operate on-demand, unscheduled air service. Air carriers authorized to operate with a 135 certificate vary from small single aircraft operators to large operators that often provide a network to move cargo to larger Part 121 air carriers. Many Part 135 operators offer critical passenger and cargo service to remote areas, providing a lifeline to populations that would not otherwise exist.” (Source: FAA Website Air Carrier Operations, Available at [Charter-Type Services \(Part 135\) | Federal Aviation Administration](#))
- **”FAA Part 135 Aviation Rulemaking Advisory Committee (ARAC)** - A formal standing *advisory committee* that is subject to FACA and provides the FAA with information, advice, and recommendations, concerning rulemaking activity for topics such as aircraft owners and operators, airman and flight crewmembers, airports, maintenance providers, manufactures, public citizens and passenger groups, and training providers. It consists of representatives from aviation associations, aviation industry, public interest groups, advocacy groups, foreign civil authorities, and FAA, that oversees the administration of all ARAC activity, including subcommittee and working group activities.” (Source: FAA Website, Advisory and Rulemaking Committees definitions. Available at [Advisory and Rulemaking Committees](#)) In September 2018, the Rotorcraft Occupant Protection Working Group (ROPWG) subcommittee submitted a report with 20 recommendations on occupant protection to the ARAC. (Source: ROPWG Final Analysis Report to the ARAC, Available at <https://www.faa.gov/media/33726>)
- **“Graphical Forecasts for Aviation** web page is intended to provide the necessary aviation weather information to give users a complete picture of the weather that may impact flight in the United States (including Alaska & Hawaii), the Gulf and Caribbean, and portions of the Atlantic and Pacific Oceans. The web page includes observational data, forecasts, and warnings that can be viewed from 18 hours in the past to 18 hours in the future. Hourly model data and forecasts, including information on clouds, flight category, precipitation, icing, turbulence, wind, and graphical output from the National Weather Service’s National Digital Forecast Data

(NDFD), are available. Low altitude data, previously found within the Helicopter Emergency Medical Services (HEMS) tool, is available to aid the Helicopter Air Ambulance (HAA) community and other low altitude flights. Built with modern geospatial information tools, users can pan and zoom to focus on areas of greatest interest.” (Source: AviationWeather.gov GFA help page. Available at [AWC GFA Help](#))

- **“Inadvertent [Visual Flight Rules] VFR Flight into IMC [(IIMC)]:** Anytime a VFR pilot is unable to maintain airplane attitude control by reference to the natural horizon, the condition is considered to be IMC regardless of the circumstances or the prevailing weather conditions. Whether the cause is inadvertent [sic] or intentional, the VFR pilot is, in effect, in IMC if unable to navigate or establish geographical position by visual reference to landmarks on the surface. These situations should be accepted by the pilot involved as a genuine emergency requiring appropriate action.” (Source: FAA Airplane Flying Handbook Available at [Airplane Flying Handbook \(FAA-H-8083-3C\)](#)). Three of the ten leading causes of fatal general aviation accidents (loss of control in-flight, controlled flight into terrain, and unintended flight into IMC) are associated with IIMC. (Source: FAA Risk Management Handbook: Available at [Risk Management Handbook](#))
- **“Instrument flight rules (IFR).** Rules and regulations established by the FAA to govern flight under conditions in which flight by outside visual reference is not safe. IFR flight depends upon flying by reference to instruments in the flight deck, and navigation is accomplished by reference to electronic signals.” (Source Instrument Flying Handbook. Available at [FAA-H-8083-15B, Instrument Flying Handbook](#))
- **“Instrument Meteorological Conditions (IMC).** Meteorological conditions expressed in terms of visibility, distance from clouds, and ceiling less than the minimums specified for visual meteorological conditions, requiring operations to be conducted under IFR.” (Source: FAA Risk Management Handbook: Available at [Risk Management Handbook](#))
- **“The National Airspace Data Interchange Network (NADIN)** also referred to as NMR (NAS Messaging Replacement), Message Switch Network (MSN) receives, processes, and distributes domestic and international flight planning, flight movement, weather observation/forecast, NOTAM [Notices to Airmen], and search and rescue messages between the NAS [National Airspace System], commercial/general aviation, U.S. Government agencies, aviation information service providers, and international Civil Aviation Authorities.” (Source: FAA National Policy Order 7930.2T – NOTAMs. Available at [7930.2T Basic dtd 12-14-23](#))
- **“The NAS [National Airspace System]** is a network of both controlled and uncontrolled airspace, both domestic and oceanic. It also includes air navigation facilities, equipment and services; airports and landing areas; aeronautical charts,

information and services; rules and regulations; procedures and technical information; and manpower and material.” (Source: FAA Website on Air Traffic Control. Available at: [National Airspace System | Federal Aviation Administration](#))

- “A [**Notice to Airmen**] **NOTAM** is a notice containing information essential to personnel concerned with flight operations but not known far enough in advance to be publicized by other means. It states the abnormal status of a component of the National Airspace System (NAS) – not the normal status.” (Source: FAA Website, What is a NOTAM? Available at [What is a NOTAM? | Federal Aviation Administration](#))
- “**Performance-Based Rules** require a safety outcome, rather than a single prescriptive approach to achieving that outcome. The flexibility gained by the performance-based approach gives industry an incentive to innovate and find new, non-traditional ways to achieve the required safety outcome.” (Source: FAA Part 23 Amendment 23-64 Implementation Procedures Guide available at [Part 23 Amendment 23-64 Implementation Procedures Guide](#))
- “**Stability Augmentation Systems (SAS)** ...provide short-term rate damping control inputs to increase helicopter stability.” (Source: Aeronautical Information Manual – Chapter 10 Helicopter Operations. Available at [Helicopter IFR Operations](#))
- “**Terminal area**: A terminal aerodrome forecast (TAF) is a concise statement of the expected meteorological conditions significant to aviation for a specified time period within 5 sm [statute miles] of the center of the airport’s runway complex (terminal)... [These forecasts] are issued for nearly 700 U.S. Airports.” (Source: FAA Aviation Weather Handbook Chapter 27 available at [FAA-H-8083-28A](#)). “Terminal areas” refers to areas covered by these forecasts; “**non-terminal areas**” refers to the areas outside of these forecasts for which this level of weather forecasting is not available.
- “For air traffic controllers who manage arriving and departing flights in the terminal area, [**Terminal Doppler Weather Radars**] TDWRs provide vital information and warnings about hazardous wind shear conditions, precipitation, gust fronts, [and] microbursts.” (Source: FAA Website on Air Traffic and Weather. Available at: [Terminal Doppler Weather Radar \(TDWR\) | Federal Aviation Administration](#))
- “[**Terrain Awareness and Warning Systems (TAWS)**] is] equipment intended to provide the flight crew with terrain awareness as well as aural and visual alerts on a display to help prevent an inadvertent controlled flight into terrain (CFIT) accident.” (Source: FAA Technical Standard Order (TSO) C151b notice available at [Federal Register :: Technical Standard Order \(TSO\)-C151b, Terrain Awareness and Warning System](#) 67 FR 78563).

- “An **Unmanned Aircraft System (UAS)** is an unmanned aircraft and the equipment necessary for the safe and efficient operation of that aircraft. An unmanned aircraft is a component of a UAS. It is defined by statute as an aircraft that is operated without the possibility of direct human intervention from within or on the aircraft (Public Law 112-95, Section 331(8)).” (Source: FAA Website, FAQ, What is a UAS? Available at [What is an unmanned aircraft system \(UAS\)? | Federal Aviation Administration](#))
- “**Visual flight rules (VFR)**. Flight rules adopted by the FAA governing aircraft flight using visual references. VFR operations specify the amount of ceiling and the visibility the pilot must have in order to operate according to these rules. When the weather conditions are such that the pilot can not operate according to VFR, he or she must use instrument flight rules (IFR).” (Source Instrument Flying Handbook. Available at [FAA-H-8083-15B, Instrument Flying Handbook](#))
- “**Visual Weather Observation System (VWOS)**: Modernized weather camera data platform [that] combines 360° cameras and wx-obs [weather observations] into one platform.... [Includes] sensor auto-calibration, sensor data validation, [and] automatically report[s] sensor or data failures.” (Source: October 2020 Presentation on the Weather Camera Program by Walter Combs then FAA Weather Camera Program Manager. Available at [PowerPoint Presentation](#))