

AERODROME OPERATIONS

Construction and maintenance of aerodrome resources (buildings, pavement, lighting, markings, and landing systems) and emergency response and security.

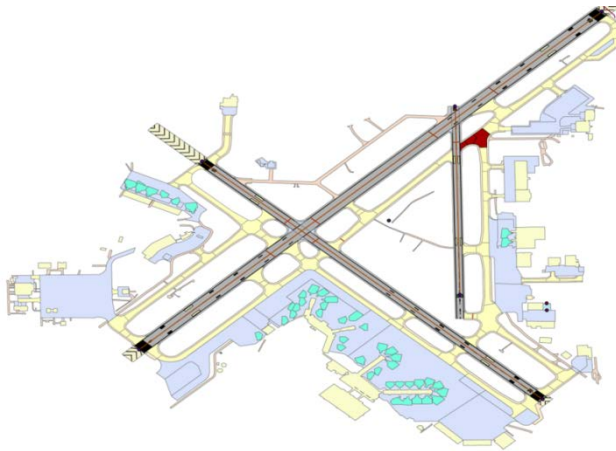
COMMERCIAL AND CARGO AIRLINE OPERATIONS

Apron control, aircraft maintenance and fueling, baggage and cargo handling, catering services, crew and aircraft scheduling, flight planning, ticketing.

GENERAL AVIATION AND BUSINESS AVIATION

Fixed-Based Operators are typically located away from the commercial concourse but have access to active taxiways and runways, and provide maintenance, fueling, flight planning, and local ground transportation service

Standardized Aerodrome Feature Database



A graphic depiction of the layout of an aerodrome is essential to safe and efficient navigation. In addition to this depiction of the aerodrome, spatial and tabular info included in a database could be utilized as an integrated source of comprehensive data:

- Aerodrome operations and facilities management
- Environmental, noise abatement or construction planning
- Leases, pavement utilization, utilities, snow removal
- Airline / Cargo/GA resource management
- ATC and apron control, routing, dispatch, and decision support
- Efficient routing of aircraft and vehicles, conflict detection and alerting
- Emergency response and security operations

AERONAVDATA developed the process and system to support the collection, management, and exchange of the data elements comprising the AIMdb and integrates, validates, and verifies airport data to populate and maintain within the AIMdb. All data management and processes adhere to DO-272/ED-99 standards and our data delivery strictly adheres to AIXM 5.x standards.

AERONAVDATA's detailed population of the FAA's Airport Mapping Database (AMDB) is comprised of the aerodrome features of the FAA-designated 30 major US airfields. These aerodrome features include the required DO-272/ED-99 standard survey features that fully support the National Flight Data Center's (NFDC) responsibility for accurate and timely distribution of aeronautical information system through Notice to Airmen (NOTAMs).

The high-level of accurate data captured and maintained in this database includes aircraft movement and non-movement areas and enables the FAA to increase the focus on operational safety at these large, complex airports. The DO-272/ED-99 AMDB stores the geometric features and all associated critical attributes and are selectable within the FAA's Digital NOTAM Manager interface.

The database aerodrome feature data production at **AERONAVDATA** uses a quality management process with automated rule-based data checks to assure accuracy and integrity for validating AIXM associations. Our proprietary ingest routines import National Geospatial-Intelligence Agency's (NGA) Stereo Airfield Collected (SAC) data directly into the Airport Mapping Database. Our analysis tools can perform comparative analysis between SAC versions such as SAC 2.5a and DO-272/ED-99 requirements.

The SAC data that directly correlates to DO-272/ED-99 is encoded into an AIXM 5.1 Core Model output. This output can be provided to the FAA for evaluation of SAC format suitability for the NOTAM Manager system. Our analysis can quickly determine if the DO-272/ED-99 required aerodrome features and attributes are contained in the SAC data or not. We can then accurately determine if additions or edits would be required by our production team to the SAC data to satisfy the minimum feature requirements and DO-272/ED-99 capture rules for NOTAMs.

INDUSTRY APPLICATIONS

- Aircraft onboard moving map displays
 - ✓ Situational awareness
 - ✓ Display taxi assignment route, position of other aircraft/vehicles
- Advanced Surface Movement Guidance Systems
 - ✓ Automate runway assignment and taxi route
 - ✓ Data communication
 - ✓ Conflict detection and resolution
 - ✓ Reduce traffic and radio communication congestion or confusion
- Digital charts and Electronic Flight Bag
 - ✓ Reduce clutter, weight, workload
 - ✓ Immediate electronic transfer
- D-NOTAM delivery
- Synthetic vision systems
- Airport or airline resource management
- Training, simulations, research and development
- Airport planning and construction
- Emergency response
- Security management

Features and Benefits

KBDL data from SAC



KBDL collected to DO-272B



The images show data capture differences between current SAC files related to KBDL in Bradley, CT and the DO-272/ED-99 Survey data for the same airfield.

The higher level of detail depicts features that are necessary for surface navigation in low visibility, such as guidance lines, hold lines, obstructions, and parking areas. Enhanced situational awareness during the critical takeoff, landing, and rollout phase of flight are provided by runway features such as centerlines, exit lines, threshold points, hold lines, and painted markings.

All are available from AeroNavData through customized AIXM 5.1 outputs selected from the DO-272/ED-99 feature list.

Any Military airport can also be captured using the same geospatial application and production capabilities we've developed for capturing the FAA's 44 major US Commercial Aerodromes.

Aero Database Features

- Aerodrome Reference Point
- Apron Element
- Arresting Gear Location
- Blastpad
- Construction Area
- Deicing Area
- Final Approach And Takeoff Area
- Frequency Area
- Helipad Threshold
- Hotspot
- Land / Hold Short Operations Location
- Painted Centerline
- Parking Stand Area
- Parking Stand Location
- Runway Displaced Area
- Runway Element
- Runway Exit Line
- Runway Intersection
- Runway Marking
- Runway Shoulder
- Runway Threshold
- Service Road
- Stand Guidance Line
- Stopway
- Taxiway Element
- Taxiway Guidance Line
- Taxiway Holding Position
- Taxiway Intersection Marking
- Taxiway Shoulder
- Vertical Polygonal Structure

Standards and Requirements

AERONAVDATA is actively involved in industry Airport Mapping Standards Development and has done much internal Research and Development work to build future capabilities into the database table structure, such as many future temporality aspects of the required airport data elements.

- ✓ Output conforms to AIXM AMDB ED-99 / DO-272 encoding guidelines.
- ✓ Conversion tools for database output to AIXM 5.1 and Shapefile formats.
- ✓ Customized imports: FAA Airports GIS 18B Surveys, NASR, NGA SAC, AIXM, CAD, and DGN digital formats.
 - ✓ AIXM 5.1 and DO-272/ED-99 -compliant airport features supporting FAA NOTAM Office
- ✓ Customizable output of selected features and supplemental data
- ✓ Automated geometry and data integrity verification with defined accuracy and resolution.