



U. S. Department
of Transportation
**Federal Aviation
Administration**

Great Lakes Region
Illinois, Indiana, Michigan
Minnesota, North Dakota,
Ohio, South Dakota,
Wisconsin

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REGIONAL GUIDANCE LETTER—AIRPORTS DIVISION

NUMBER: 5300.4
DATE: August 11, 2010
SUBJECT: Airports GIS Data Collection Implementation Policy
REFERENCES: FAA Advisory Circular 150/5300-16, -17, and -18

**This Regional Guidance Letter expires once
National Policy is issued.**

This Regional Guidance Letter provides guidance to ensure Aeronautical Surveys, Airports Geographic Information System (Airports GIS) usage, and associated electronic Airport Layout Plan's (eALP) are implemented in an orderly and cost effective manner within the Great Lakes Region.

Background

In 2006, Airports GIS was implemented into our AIP and PFC programs through the publication of Advisory Circulars (AC's) 150/5300-16, -17, and -18. These AC's provide general guidance and specifications for aeronautical surveys and collection of field data. The Airports GIS website was deployed shortly after the publication of the AC's.

The Airports GIS website is the primary portal for data submission, project management, and data retrieval. All safety-critical data flows through the Airports GIS portal. Airport sponsors and consultants must each register (once) on the Airports GIS website. This allows the sponsor to create Airports GIS projects and assign representative(s) (consultants/surveyors) to act on their behalf. States desiring to act on behalf of an airport may develop letter-of-agreements with individual airports allowing them to create projects and associate consultants/surveyors with specific projects. Airports and their representatives will be able to readily access and view a much wider range of airport data than currently available.

The airport, or their representative, must use AC 150/5300-18 Table 2-1, "Survey Requirements Matrix," to develop a complete Statement of Work (SOW) that can then be uploaded into Airports GIS. The SOW is the airport sponsor/consultants written

description of their methodology for surveying/consulting services that are going to be provided as part of the project (including action items, timelines, necessary airport resources and general information). The SOW must be reviewed and accepted by the FAA. The ADOs are responsible for review and concurrence with assistance from the Airports GIS staff from AAS-100, AGL-610 and AGL-620 as needed.

After the SOW is approved, implementation and quality control plans must be submitted by the Airport Sponsor, or their designated consultant, to Airports GIS for National geodetic Survey (NGS) approval prior to initiating surveying activities. This requires no action on behalf of the ADOs or Regional staff.

At the conclusion of the project a final report must be submitted by the Sponsor/Representative indicating any variation from the plan. Once the Airports GIS project is completed, the associated consultants/surveyors access to the project lapses.

ADO personnel must request access to the Airports GIS portal to monitor projects, assist in coordination, and review and concur with SOWs. As airport data becomes available, registered users will have ready access to critical airport information to assist in project formulation and coordination.

Airport data that is accepted and verified in Airports GIS is repositied onto FAA computer servers. This data is not publicly available to consultants or surveyors; it is only available to airport sponsors and FAA for downloading. However, the airport sponsor may distribute the data at their discretion after downloading it to their local computer. As updated data is uploaded to Airports GIS, the existing data will be archived. As an example, the data that the WAAS office is collecting as part of the survey's for LPV approaches is uploaded through the Airports GIS website per airport location. Once the data is uploaded, the Flight Procedures office then downloads it for use in developing an approach.

Several potential future Airports GIS modules are currently under consideration as applications for using the airport data. The first Airports GIS module in development is the electronic Airport Layout Plan (eALP) module. This module is designed to pull airport data directly from Airports GIS data storage and create a complete Airport Layout Plan, including data tables. The interface will be web-based and will provide users the ability to turn on and off data as needed in a dynamic viewer. Functionality may include drop-down menus and a wide ranging toolset. Other potential future modules include applications for FAA Flight Procedures to develop approach procedures based on current data, electronic Notice to Airmen (NOTAMs), 5010 Airport data, Obstruction Evaluation and Airport Airspace Analysis, etc.

Regional Policy

At this time, the combination of limited field expertise in the application of the AC's and the slow development of the Airports GIS website data acceptance, quality assurance process, tools, and eALP processes lead the region to believe that the system will not be able to accommodate the potential volume of questions or projects expected. This section of the Regional Guidance Letter provides direction in the implementation of

Aeronautical Surveys and Airports GIS (AC's 150/5300-16, -17, and -18) into federally supported projects. This direction is broken into distinct events that are typically completed as part of an airport project.

1. Training:

- Each ADO Manager shall appoint a single ADO Point of Contact (POC) for Airports GIS. The POC will:
 - Be the main point of contact for the Region to disseminate information to and receive ADO inquiries from (ADO Manager's will also be CC'd).
 - Take Level 2 of the Airports GIS Integrated Distance Learning Environment (IDLE) online training at a minimum.
 - Attend bi-monthly AAS-100 telecons on Airports GIS/SMS.
 - Attend Regional telecons on Airports GIS as requested by the Region.
 - Attend training as provided by the Region or Headquarters.
- Remaining ADO staff is encouraged to take the IDLE Level 2. Airports GIS short internet videos should also be viewed as they become available on the Airports GIS website.
- All ADO staff is also encouraged to read the Airport GIS Pilot Program: Interim Guidance on Aeronautical Surveys and Airports GIS Deployment Phasing Memo, dated June 24, 2010. This document provides extensive background on the development of Airports GIS and the AC's, the Pilot Programs, Phasing, Field Responsibilities, and the future direction of the program.

2. **Obstruction Surveys and Airport Airspace Analysis:** All obstruction surveys required to support approach procedure development or in support of an Airport Layout Plan (ALP) (i.e. safety-critical data) must incorporate the referenced AC's. If the most recent imagery is more than 5 years old, the project scope must include collecting imagery in accordance with the AC 150/5300-17 to allow NGS independent data verification and the best minima.

Projects to construct a new runway, extend an existing runway or move an existing threshold and anticipates an instrument approach should have an obstruction survey completed during the project design phase as procedure development may take 18 months, or longer, after the data is accepted by NGS.

3. **Primary and Secondary Airport Control Station (PACS/SACS):** PACS/SACS provide a cost effective method to tie the airport to the National Spatial Reference System (NSRS) where sufficient development activity warrants. FAA requires certificated airports (FAR Part 139) to have a minimum of one PACS and two SACS in order to maintain airport data and control station integrity.¹ The FAA recommends that National Plan of Integrated Airport Systems (NPIAS) airports have at least one permanent PACS.²

¹ "A Guide to Airport Surveys" Dated May 15, 2009, page 3

² Per FAA AC 150/5300-16A, Section 2.2.1 Permanent Control

NGS has established PACS/SACS at most certificated airport and can be found at the link in the bottom of this section. Installation of PACS/SACS should be included in the project scope at primary airports and large towered General Aviation Airports if none exist. Re-establishment of damaged PACS/SACS should be included as an additive alternate in the contract documents. Installation of PACS/SACS at non primary airports should be included only when financially supported by sufficient near-term development that requires geodetic control as determined by the ADO. Any location requesting the use of temporary control should coordinate with AGL-610 or AGL-620 first.

Note: The Airports GIS Pilot Program Phase II does not include the establishment of PACS or SACS. If there are no existing PACS or SACS at the airport, the effort to establish them must be a separate project.

Airports with NGS established PACS and SACS

<http://www.ngs.noaa.gov/cqi-bin/airports.prl?TYPE=PACSAC>

4. **Airport Master Plans/ALP Updates:** Airport Master Plans and ALP's using ACs -16, -17, and -18 should be limited to Large and Medium Hub airports, pilot program airports, and those airports desiring to fully implement Airports GIS by FY-2012. These Airports require an obstruction survey for all runways and incorporation of additional planimetric data (runways, taxiways, aprons, terminals, lighting, etc.) in addition to GIS features included in the obstruction survey. Collection of planimetric data should be limited to features required to produce an ALP. Cadastral (land use, property map, airport boundary, etc.) and utility data should be migrated from current airport ALP/Exhibit-A. New imagery will be required, existing imagery may be explored, but only considered if it was recently flown and of sufficient accuracy. The airport sponsor should also work to leverage data from recent projects such as surveys conducted by the WAAS-office. For obstruction surveys completed within an ALP, please refer to "Obstruction Surveys and Airport Airspace Analysis" above.

NOTE: This is an interim position until the pilot program is completed and recommendations published or national guidance is issued.

Airports that do not fall into the above criteria shall create .pdf versions of their Master Plan and ALP documents for uploading into Airports GIS and OE/AAA.

5. **New construction and rehabilitation surveys into Airports GIS:** Airport construction surveys for Large and Medium Hub airports and those airports desiring to fully implement Airports GIS by 2012 will be conducted using ACs -16, -17, and -18 and entered into the Airports GIS portal.

Construction at all airports, irrespective of size and type, shall meet the requirements of AC -18 whenever the runway ends with approaches are moved.

NOTE: This is an interim position until the pilot program is completed and recommendations published or national guidance is issued.

6. **Review and Concurrence with SOW in Airports GIS:** Each ADO will review and accept Airports GIS SOW's in Airports GIS. This review is to ensure the SOW identifies all work needed to be completed and is consistent with the development project. The POC identified in Section 1 (above) will work with AGL-610/AGL-620 to gain experience with the requirements and to assume this responsibility as the program is deployed.

All Airports GIS Pilot Program Scopes of Work and Statements of Work shall be coordinated with AGL-610/AGL-620 prior to approval by the ADO. The RO shall also be notified of scoping meetings and given the opportunity to listen in. This will ensure that experiences across the ADO's may be shared.

SOW Templates are available on the Airports GIS website under "Airports – Steps to Follow." Current templates include "Aeronautical Survey and Airport Airspace Analysis and General Construction Project."

7. **Notes:**

- Regional Guidance Expiration - This Regional Guidance Letter expires once national policy is issued.
- Regional Guidance and Airports GIS examples will be placed on the Regional Sharepoint website (see "Resources" page for address).
- Future Guidance –
 - AC 150/5300-17 and AC 150/5300-18 are currently being updated to include clearer explanations, guidance, and templates for different types of projects.
 - ARP is considering both a national transition policy for Airports GIS that may phase in requirements based on "triggering events" (Master Plan update, instrument approach procedures, runway extensions, etc) for smaller general aviation airports, as well as the development of guidance to small general aviation airports, heliports, and seaplane bases in their transition to Airports GIS.
- Technology – New computers or upgrades are not needed at this time. All applications are internet based and do not currently require additional computing power or software. However, it is recommended that ADO employees using Airports GIS be equipped with dual monitors. ADO's should prepare for the future allocation of Plotters, though rollout is not expected in the near-term.

Resources:

ACs :

AC150/5300-16A, General Guidance and Specifications for Aeronautical Surveys:

Establishment of Geodetic Control and Submission to the National Geodetic Survey, September 17, 2007

AC150/5300-17B, General Guidance and Specifications for Aeronautical Survey Airport Imagery Acquisition and Submission to the National Geodetic Survey, September 29, 2008.

AC150/5300-18B, General Guidance and Specifications for Aeronautical Surveys to NGS: Field Data Collection and Geographic Information System (GIS) Standards.

Websites:

Airports GIS: <https://airports-gis.faa.gov/>

Regional Sharepoint: <http://sharepoint.arp.faa.gov/agl/agis/default.aspx>

FAA Survey Data: http://avnnet.jccbi.gov/datasheet_prd/owa/pro_datasheet

Existing UDDF Data: <http://www.ngs.noaa.gov/>

PACS/SACS Data: <http://www.ngs.noaa.gov/AERO/aero.html>

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Attachment A: Imagery Area, Map Scale and Ground Contour Recommendations

Imagery Recommendations:

Airport Category	Imagery Area
L/M Hub Airports	Sufficient to perform AS/AAA as required by -18, 2.7.1.1 for all runways with existing, or near-term planned, vertical guided approaches Multiple Flight Levels
Airports with CAT II/III Runways	Sufficient to perform AS/AAA as required by -18, 2.7.1.1 on runways with Cat II/III, vertical guided approaches Multiple Flight Levels
All other Airports with existing vertically guided approaches	Airport property including Vertically Guided Protection Surfaces (for runways with Vertically guided existing approaches) Single Flight Level
All other Airports with <u>near-term planned vertically guided approaches</u>	Airport property and Object Identification Surfaces (OIS) in accordance with -18, 2.7.1.1, for all runways with near-term planned vertically guided approaches Multiple Flight Levels

Mapping, Ground Contours and Orthoimagery Recommendations:

Airport Type	Area	Map Scale	Ground Contours
L/M Hub Airport or CAT II/III	Airport Core including Vertically Guided Protection Surfaces	1"=50'	1'
	Remainder of Airport Property	1"=100'	1-2'
	Remainder of Imagery Area	1"=200'	Not Required
Small/Non-Hub Airport	Airport Core including Vertically Guided Protection Surfaces	1"=100'	1-2'
	Remainder of Airport Property	1"=200'	2-5'
	Remainder of Imagery Area	1"=200'	Not Required
Certificated / Non Primary	Airport Core including Vertically Guided Protection Surfaces	1"=100'	1-2'
	Remainder of Airport Property	1"=200'	2-5'
	Remainder of Imagery Area	1"=200'	Not Required
Non-Certificated	Airport Core including Vertically Guided Protection Surfaces	1"=200'	5'
	Remainder of Airport Property	1"=200'	5'
	Remainder of Imagery Area	1"=200'	Not Required

Notes:

- 1) Large land-mass airports may elect to use 5' or 10' contours for non-core airport property.
- 2) Airport Core Area usually includes all airport property except in large land-mass airports
- 3) If noise contours extend beyond imagery area recommendations, the airport may wish to collect imagery to include entire noise program area. If imagery is collected to include noise contours, consider conducting Airport Airspace Analysis for runways with vertically guided approaches.

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Legend

- Sponsor/Consultant Action
- FAA Action
- NGS Action

