



Federal Aviation Administration

Memorandum

Date: 08/11/2011

To: Fred Anderson, Acting Director, Aeronautical Products, AJV-3
Ed Lucke, Director, Aviation System Standards, AJV-3

From: Leslie H. Smith, Manager, Flight Technologies and Procedures Division, AFS-400 *RLK*

Subject: Landing Threshold Geodetic Datum.

The purpose of this memorandum is to clarify the reference geodetic datum used to identify landing runway threshold latitude, longitude, and ellipsoidal height values and their application in instrument procedure design of Ground Based Augmentation System (GBAS) Landing System (GLS) and Localizer Performance with Vertical Guidance (LPV) instrument procedures. The Flight Technologies and Procedures Division (AFS-400) March 17, 2011 memorandum regarding Procedure Development Geodetic Datum is canceled.

DEFINITIONS (for procedure design purposes).

AVNIS	Aviation System Standards Integrated Services (database)
FAS	Final Approach Segment
FTP	Fictitious Threshold Point
GLS	Ground Based Augmentation System (GBAS) Landing System
ITRF00	International Terrestrial Reference Frame of 2000
LAAS	Local Area Augmentation System
LPV	Localizer Performance with Vertical Guidance
LTP	Landing Threshold Point
NAD 83	North American Datum of 1983
PBN	Performance Based Navigation
WAAS	Wide Area Augmentation System
WGS 84	World Geodetic System of 1984

For procedure design purposes, ITRF00 is equivalent to WGS-84 (G1150) and is used as a reference to both in this memo. For instrument procedure design purposes, AVNIS contains LTP latitude, longitude, and ellipsoid height values referenced to NAD 83. Eventually, it will also contain the ITRF00 values. Until the ITRF00 values are available, use the AVNIS NAD 83 values for procedure design.

GLS avionics require LTP and associated ground antennas to be identified using a single reference datum. The datum can be NAD 83 or ITRF00 as long as the LTP and associated antennas are specified in the same datum.

LPV avionics require the LTP to be identified in ITRF00 latitude, longitude, and ellipsoidal elevation. Where only NAD 83 data are available, design the procedure using the NAD-83 values; however, for 8260-10 documentation of the FAS data block, convert the NAD-83 latitude, longitude, and ellipsoid height to ITRF00 values. A computer program that performs the conversion is available on the Flight Procedure Standards Branch (AFS-420) website for Microsoft Windows based computers. The program accepts manual entry of data or can access the AVNIS database.

NAD83(CORS96) to WGS84(G1150) Interface v0.2 ©The MITRE Corporation, 2011

Position Information

Manual Entry Use AVNIS

Airport: Runway:

NAD83 Latitude: 80 0 0 N

NAD83 Longitude: 150 0 0 W

NAD83 Ellipsoid Height: 50 feet

Time Information

Manual Entry Use AVNIS

Airport: Runway:

Input Epoch: 06 13 2011

Output Epoch: 06 13 2011

Converted WGS84 Coordinates

Latitude:

Longitude:

Height (ft):

STATUS: NA

* All computations performed by the HTDP Calculator developed by National Geodetic Survey
<http://www.ngs.noaa.gov/cgi-bin/HTDP/htdp.pr1?f1=1&f2=1>

If you have any questions, please contact Mr. Rick Dunham, Manager, Flight Procedure Standards Branch, AFS-420, at (405) 954-4164.