

# THE UNIVERSAL<sup>®</sup> FLYER

## FAA Plans to Decommission Hundreds of VOR Stations in Favor of SBAS

The Federal Aviation Administration (FAA) has been proposing to reduce the number of Very High Frequency Omnidirectional Radio (VOR) navigation stations for years in favor of a Satellite-Based Augmentation System (SBAS). In the Federal Register Notice, the FAA described a proposed federal rule for a long-awaited transition of the conventional navigation infrastructure of the National Airspace System (NAS) to Performance-Based Navigation (PBN) for NextGen.

The FAA has now formally published its final policy, "Provision of Navigation Services for the Next Generation Air Transportation System (NextGen) Transition to Performance-Based Navigation (PBN) (Plan for Establishing a VOR Minimum Operational Network (MON));" that outlines the decommissioning process, which became effective on 26 July 2016. Over the next decade, hundreds of VOR navigation aids will be decommissioned; 308 to be exact.

The final policy provides a (tentative) discontinuance candidate list, both for Phase 1 (2016-2020) and Phase 2 (2021-2025). Out of this list, the FAA has already made its determination for discontinuance at 45 facilities. For the full proposed discontinuance candidate list, visit: [www.federalregister.gov/a/2016-17579](http://www.federalregister.gov/a/2016-17579). The FAA does plan to retain an optimized network of VOR NAVAIDs, allowing pilots to revert back to conventional navigation for approach, terminal and enroute operations in the event of a GPS outage.

Universal Avionics SBAS-Flight Management System (FMS) includes Area Navigation (RNAV) and Required Navigation Performance (RNP) functionality that ensures our operators are equipped for PBN. PBN is proven to save fuel, relieve congestion and reduce delays at many airports, domestic and international. The world is relying on PBN for airport access and operational safety. To learn more, contact your Universal Avionics Sales Manager.

## Product News and Company Highlights

Matching Advanced Avionics to Customer Needs

### UniLink<sup>®</sup> Desktop Training Software Now Available

The new UniLink Desktop Training Software for Future Air Navigation System (FANS) familiarization is now available. Simulating both the UniLink Communications Management Unit (CMU), and 4-inch or 5-inch FMS Control Display Unit (CDU) or Multi-functional CDU (MCDU), the software allows you to walk through a series of scenarios simulating two-way messaging using FANS technology. A drop-down menu in the software's Tutorial Control Panel provides a variety of defined training scenarios.

As described in the FAA Advisory Circular (AC) 120-70C, the UniLinkTrainer can be used for required "operational use training" as a means to receive operational approval when part of an FAA-approved course.

The new software is available for purchase and download from our website:

[www.uasc.com/ULT](http://www.uasc.com/ULT). There are two versions to best meet your needs: Lifetime License (\$2,500 USD) and 1-Year License (\$500 USD).



### TAI Announces Hürkuş TC During Farnborough

After a joint evaluation process, the Turkish Aerospace Industries (TAI) Hürkuş tandem two seat trainer has completed all flight testing and obtained Type Certificate (TC) from the Turkish Directorate General of Civil Aviation (DGCA) with its validation certificate from the European Aviation Safety Agency (EASA). The announcement was made by TAI during the 2016 Farnborough International Airshow in the United Kingdom.

The primary and basic trainer aircraft was designed and manufactured by TAI and is a low wing and single engine turboprop aircraft. Each flight deck includes two Universal Avionics Radio Control Units (RCU) and two EFI-890R Advanced Flight Displays to be used as Primary Flight Displays (PFD).

The TAI Hürkuş is primarily being built to meet the requirements of the Turkish Air Force Command (TAF). The aircraft will be used to execute basic pilot training, instrument flying, navigation training, and weapons and formation training missions. In addition, the TAI Hürkuş will be exported as a civilian and military flight trainer aircraft.



# THE UNIVERSAL FLYER®

## DTU Floppy Disks Approach End of Life

### Discontinuation of 3.5-Inch Floppy Disk Media Delivery for Navigation Databases

Due to an increasing obsolescence of 3.5-inch floppy disks, we will be discontinuing media delivery for navigation databases with Software Control Number (SCN) 601/604 and earlier after Disk Cycle 1709 on 17 August 2017. This will affect customers operating UNS-1B/1C/1Csp/1D/1K/1B+ FMSs with Data Transfer Unit (DTU) part number (P/N) 1405-XX-X. The navigation database P/N 1350-XX will still be offered, but operators will be required to download the navigation database from UniNet onto personally-owned 3.5-inch disks for upload into the FMS.

Operators are encouraged to consider upgrading their legacy DTU to the latest – the Solid-State Data Transfer Unit (SSDTU) or Portable SSDTU. A Trade-In (Upgrade) Kit providing trade-in credit for legacy DTUs when upgrading to the SSDTU is available through the end of 2017. Please note that this kit will be discontinued on December 31, 2017.

The SSDTU supports USB and SD media, representing the next generation of data upload and download for your aircraft. Interfacing with up to eight Universal Avionics Line Replaceable Units (LRU), the SSDTU creates a centralized uploading/downloading center. The SSDTU features flash memory technology to replace the floppy and ZIP disk technology of the DTU. Each unit contains two user-accessible media ports supporting Universal Serial Bus (USB) and Secure Digital (SD) mass storage devices.

SSDTU operators simply logon to UniNet, our secure online service center, to download the navigation database and save it to USB or SD card. This download service is provided at no additional cost and allows you to save money by avoiding the Media and Handling Fee and oftentimes, the cost of express shipping. Contact your Universal Avionics Sales Manager for more information and to learn about the additional benefits the SSDTU offers.

## Recent Service Bulletins and Letters

Visit UniNet today at [www.uasc.com/UniNet](http://www.uasc.com/UniNet) to download any of our Service Bulletins (SB) or Service Letters (SL), including the recently released ones listed to the right, from the Tech Pubs tab.



SB / SL No.	Release Date	Title
SB3633 (Rev A)	7/28/16	Introduction of FMS SCN 1001.1/1101.1 and PAS 10.4
SB3426	7/25/16	Installation of Mod 2 into Vision-1®
SB3646	7/18/16	Introduction of SCN 30.4 for UniLink UL-800 and UL-801
SL2847 (Rev D)	7/14/16	WAAS/SBAS FMS Compliance with AC 20-165B
SB3303 (Rev A)	7/14/16	Introduction of the SSDTU and Portable SSDTU
SB3647	7/8/16	Installation of Mod 14 in the EFI-890R/EFI-890H
SB3284 (Rev A)	7/7/16	Installation of SCN 32.2 and Mod 2 in the ASU
SB3641	7/6/16	Installation of SCN 1017.1.9 in the EFI-890 PFD and ND

## Exciting Changes Are Coming!

Come January 1st, we will be introducing new forms of communication for you, our customers! This will provide you with a better choice in the selection of what type of news you want to hear, when you want to hear it, and how you want to find out about it. Stay tuned for more!

### About

The Universal Flyer is a quarterly publication produced by Universal Avionics Systems Corporation. This newsletter provides information about Universal Avionics as a company, its products and services as well as regulatory and educational information relevant to the owners and operators of business, regional and air transport aircraft.

### Feedback

Your feedback is appreciated. Email your comments to: [universalflyer@uasc.com](mailto:universalflyer@uasc.com).

### Update

Receive The Universal Flyer by mail or email. Email [universalflyer@uasc.com](mailto:universalflyer@uasc.com) or call the Marketing department at (800) 321-5253 or (520) 295-2300 to update your profile.

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## From the Flight Deck

Discussing Command Heading (CMD HDG) with Universal Avionics Pilot Instructor – Customer Training



Mike Michalski, Pilot Instructor – Customer Training

One of the FMS functions that is often avoided is the “Command Heading” or “CMD HDG.” This function can be used instead of the aircraft’s Flight Guidance System (FGS) Heading mode. While many operators may prefer to use the latter when given a vector, the potential for forgetting to return to Long Range Navigation (LRN) mode to resume

normal navigation is increased. This is not as big of a concern at altitude/enroute as it would be in the terminal area; especially on vectors to final approach course. The CMD HDG mode may help reduce this potential by never having to leave LRN mode on the FGS.

The function is accessed from NAV 1/3 (NAV 1/2 in Software Control Number SCN 60X) by pressing the HDG Line Select Key (LSK), or from the same LSK on the Maneuver (MNVR) page. Once engaged, a new first NAV Page 1 will appear with the CMD HDG overlay options on the right side of the screen.

The current aircraft heading will appear on a white, blinking cursor at the top. A new heading may be inserted by typing it directly at the cursor and pressing ENTER once to allow the FMS to insert either an ‘L’ or ‘R’ to indicate the shortest turn direction to the new heading, then press ENTER again to accept that turn. The turn direction may be changed as needed by pressing the ± key before pressing ENTER the second time.

For most newer generation FGS’s, a second option exists, the “Interactive Command Heading.” It is engaged by also pressing the HDG LSK and then pressing ENTER either once or twice (consult your aircraft flight manual). The Heading Bug knob of the FGS is now interactive with the heading cursor field and turning the knob left or right will both move the bug and change the heading value in the field, appended with the letter L or R, as appropriate.

Once in CMD HDG, follow-on vectors may continue to be input using one of the two methods mentioned. Whenever a heading is away from the Active Leg (FM-TO) on the NAV page, NO INTCPPT will appear below the heading/cursor.

Once a heading that is within 135° (enroute and terminal phase of flight only) of the FR-TO leg is entered, the NO INTCPPT changes to INTERCEPT and an arrow pointing to its LSK will allow the crew to make that selection so that the FMS will continue on heading until joining the active leg. That LSK will now read HDG SEL, which if pressed, would revert the FMS to flying the heading only without joining the FR-TO leg.

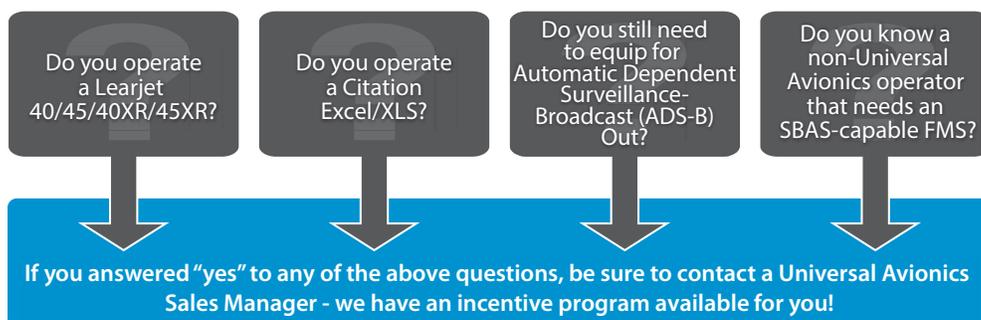
For approximately the last 15 years, FMS installations (if configured) will automatically engage the CMD HDG mode when the approach is activated manually, (recommended only when receiving a “vectors for final” type of clearance). This means that the crew can immediately start the vector turns merely by rotating the heading bug knob of the FGS. Once the heading is within 90° of inbound course (the maximum intercept angle with approach active), and the controller issues a “cleared for approach” clearance, INTERCEPT may be pressed for the FMS to join final course. Thus, eliminating the need to go from FGS Heading Mode back to LRN mode.

Once an intercept is completed, in any phase of flight, the CMD HDG mode is discontinued and normal navigation is resumed. Anytime the CNCL HDG LSK is pressed, the FMS will revert back to normal leg navigation and remove the CMD HDG overlay.

Another feature of the CMD HDG mode is its ability to quickly calculate new headings when the clearance to turn is issued as an “offset”, or number of degrees to turn either left or right. As an example, if you were presently heading 027° and were told to turn left 45 degrees, what is the new heading? Mathematically it would be:  $360° - (45° - 27°)$ , or 342°, not exactly intuitive, but the FMS can do this very quickly with the correct button sequence. In this case, engage the HDG function with its CMD HDG overlay on NAV 1/4 as before, but instead of entering numbers first as done for an assigned heading, press the letter key L or R first. This will insert the word TURN ahead of the heading field.

The number of degrees offset is then entered into the field and on the first press of ENTER, will display the resultant new heading. ENTER must be pressed a second time for the FMS to start commanding the turn.

## Limited-Time Incentive Programs Available



# THE UNIVERSAL FLYER®

## Celebrating 35 Years at NBAA–BACE 2016

Be sure to visit us in booth 235 during the 2016 National Business Aviation Association's (NBAA) Business Aviation Convention & Exhibition (BACE). This year's event will be held at the Orange County Convention Center in Orlando, Florida from November 1st through the 3rd. We invite you, our valued operator, to join us to help celebrate our 35 years of business. After all, we couldn't have made it to this milestone without you!

We'll have an abundance of educational opportunities to learn more about NextGen and Data Link technologies, including ADS–B, DataComm and Link 2000+. Helpful information and corresponding demonstrations will be available to learn more about Controller–Pilot Data Link Communications (CPDLC) and CPDLC Departure Clearances (DCL), along with their operational benefits. In addition, our experts can walk you through the entire NextGen roadmap and how our products fit into it for ADS–B, Localizer Performance with Vertical Guidance (LPV), Wide–Area Augmentation System (WAAS)/SBAS, FANS and Link 2000+.

Also, while you're at Static Display at the Orlando Executive Airport, make sure to schedule time to visit our Cessna Citation VII with the InSight® Integrated Flight Deck. We'll see you there!



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