CHARTING GROUP MINUTES

I. Opening Remarks

The Aeronautical Charting Forum (ACF) was hosted by the United States Geological Service (USGS) at their headquarters located in Reston, VA. Valerie Watson, AJV-553, opened the Charting Group portion of the forum on Wednesday, October 28. Valerie acknowledged ACF Co-chair Tom Schneider, AFS-420, who presided over the Instrument Procedures Group (IPG) portion of the Forum the previous day. Valerie also expressed appreciation to Lance Christianson, NGA, for coordinating with USGS to host the 15-02 ACF.

II. Review Minutes of Last Meeting, ACF 15-01

The minutes from ACF 15-01 meeting were distributed electronically last spring via the Aeronautical Information Services (AIS) ACF website: http://www.faa.gov/air_traffic/flight_info/aeronav/acf/. The minutes were accepted as submitted with no changes or corrections.

III. Agenda Approval

The agenda for the 15-02 meeting was accepted as presented.
IV. Presentations, ACF Working Group Reports and ACF Project Reports

ICAO/IFPP Committee Report

Mike Webb, AFS-420 and advisor to the U.S. Delegation to the ICAO Instrument Flight Procedures Panel (IFPP), provided an update on the ICAO/IFPP Committee activities and an overview of the key topics of the ICAO/IFPP Integration Working Group (IWG), see Slide #2.

Mike provided a brief on the meeting held in Montreal this past September. Mike discussed the ongoing debate regarding the titling of procedures based on GBAS. The U.S. delegation is looking into how the U.S. can align GBAS terminology with the GLS definition, including the possibility of renaming of GLS procedures GBAS.

Next Mike discussed several subjects that are currently under discussion within the ICAO/IFPP Committee. He touched on updates being done to Helicopter Point-in-Space criteria, work being done internationally on specifications for Hybrid Procedures, topics related to the Relocation and Renaming of Significant Points, and work being done on the Classification of ATS Routes. More information on these topics is included in Mike’s presentation slides.

Ron Renk, United Airlines, stated that procedure name of GLS approaches is of huge concern to industry. He stated that the naming needs to be consistent or it can cause confusion in the cockpit. Lev Prichard, APA, agreed that the chart naming is a huge issue, especially with regards to training. Mike stated that the equipment manufacturers are asking for a reevaluation of the chart naming of RNAV and GLS due to these recognized issues.

ACTION: Mike Webb, AFS-420, will provide an update at the next ACF.

PARC PBN Procedure Naming and Charting

Mike Webb, AFS-420, provided an update on the Performance Based Operations Aviation Rulemaking Committee (PARC) Performance Based Navigation (PBN) Procedure Naming Action Team activities since the last ACF. Mike referred to his discussion during the IPG portion of the meeting where he reported on the charting of PBN Navigation Specifications in a PBN Requirements Box (ACF-IPG Item 13-02-312).

Regarding the changes to the PBN procedure naming, Mike stated that the U.S. delegation is working through different committees regarding the implementation of new ICAO procedure names. ICAO will be adopting “RNP” for the procedure title, while the US is still planning to retain “RNAV”. Concerns are being raised regarding how to deal with the titling mismatch. The delegation is going back to the AirNav Commission to readdress these issues. The meeting is to take place in January 2016.

ACTION: Mike Webb, AFS-420, will provide an update at the next ACF.
Airport GIS

Dr. Mike McNerney, AAS-100, provided an update on the progress made on the FAA Airports GIS program. He began by reviewing the FY 2015 deliverables. The Surface Analysis & Visualization (SAV) Tool is now fully automated and has been made accessible to all three service areas. The Modification of Standards (MOS) tool is now fully electronic and is currently being tested by the SW region. The Electronic Airport Layout Plan (eALP) tool is still being worked and is now moving forward with electronic signatures and is rapidly approaching a fully digital eALP process.

Dr. McNerney then discussed progress of the NAV Lean 5010 Airport Data Update Tool. He stated that AC 150/5300-19, Airport Data and Information Program was signed on 30 September 2015, but has yet to be implemented. Data is provided and maintained by the airports through the use of the 5010 Web tool. The data is transmitted to NFDC using XML, minimizing the chance of error because the data does not require manual input.

Next, Dr. McNerney gave an update on the implementation process associated with the Cloud Server. The cloud server now has aerial photography for over 900 airports, 2266 airports have their legacy ALPS in PDF format stored on the server and 576 airports have their airport signage and marking plans on the server.

Dr. McNerney stated the next safety issue that will be looked at is runway incursion data. The Office of Airports have geolocated runway incursion data from 2007-2014. Airport managers/personnel will be able to graphically view and analyze the data. This tool will also allow for a system-wide analysis to look at the frequency of runway incursions.

Ted Thompson, Jeppesen, inquired about public access to the Airports GIS tools and data. This generated vigorous discussion regarding the desire for public access. Rune Duke, AOPA, Chris Hill, Delta Air Lines, Mike Stromberg, Air Wisconsin, John Collins, GA Pilot, Lev Prichard, APA, and others expressed their desire for access to the data and the tools associated. All agreed that an FAA-populated and maintained central repository for airport information in the NAS is desirable, but is of limited use if not made available.

Dr. McNerney stated that currently, though Airports GIS will be the designated source for Airport data, the Office of Airports is not the authorized dissemination point for the data. He explained that Aeronautical Information Services (AIS) remains the office of dissemination for aeronautical data in the NAS. He also said that there is not currently a plan for public access to the tools, only the data. How AIS will eventually make the data available, in addition to currently available NFDD, eNASR and subscriber files has yet to be determined.

Dr. McNerney acknowledged ACF consensus for public access to Airports GIS in its entirety (data and tools). Jill Olson, AJV-553, stated that she would explore the issue of public access with AIS Director Abby Smith.

**ACTION:** AAS-100, will provide an update at the next ACF.

**ACTION:** Jill Olson, AJV-553, will provide an update on outcome of discussion with FAA Management regarding public access to Airports GIS.
Discontinuation of VOR Services

Leonixa Salcedo, AJM-324, briefed the issue. Leonixa gave an overview of the VOR MON (Minimum Operating Network) program and provided a status report of activity since the last ACF. She reviewed the progress made to date on identifying the specific VORs to be decommissioned and briefed that the number of VORs expected to be decommissioned has been reduced to just over 30% (approximately 308). Leonixa emphasized that the process for decommissioning would follow the process as outlined in Joint Order 7400.2.

Approval for Phase I was received in September 2015. Phase I will run from October 2015 through to September 2020 and will result in 74 VOR decommissionings. Phase II will involve the remaining VOR decommissionings, resulting in a total of 308 by the end of 2025. The final list of all VORs to be decommissioned is still yet to be made public. It is anticipated that over the life of the program (Phase I and II), 15 VORs will be decommissioned in the Western Region, 162 in the Central Region and 131 in the Eastern Region.

Leonixa commented that work continues on evaluating the airway, procedure and airspace impact of those VORs selected for decommissioning. Leonixa emphasized that where a decommissioned VOR impacts a segment of an airway, that segment may not necessarily be replaced. A significant number of Victor and Jet routes/segments are expected to be eliminated. The total project is expected to generate changes to approximately 7700 instrument flight procedures.

John Collins, GA Pilot, expressed his concern over the current problems within the NAS regarding the disconnect between RNAV routes and Victor Airways. Leonixa stated that work is ongoing to insure those issues are addressed.

Lev Prichard, APA, expressed his concern over the potential impact of a GPS outage and the ability of the MON to handle all the aircraft airborne within the NAS during an outage. Lev asked if facilities have a contingency plan for the loss of GPS. Dale Courtney, AJW-292, responded that there is a concept of operations in place. However, there is still work ongoing to address training, awareness, new AIM guidance, and detailed plans for how the MON would operate should there be a GPS outage, either nationally or within a specific geographic area. Dale stated that the VOR MON is just one part of the FAA’s contingency/back up plans.

**ACTION:** Leonixa Salcedo, AJM-324, will provide an update the next ACF.

National Route Strategy / PBN Implementation Process FAA Order 7100.41

No update provided. Bruce Kinsler, AJV-142, reported to Valerie Watson, AJV-553, that his team would provide a briefing at the April 2016 ACF.
VFR Chart Print Schedule Realignment and Synchronization

Rick Fecht, AJV-5223, briefed the issue. Rick stated that a White Paper submitted to management detailing the changes to the VFR chart print schedule has been accepted and is now part of the operations plan, with a target implementation start date of early 2017. There remains a lot of work to be done within Visual Charting to meet this target and management is actively working through those issues.

Rune Duke, AOPA, asked if the FAA is planning to provide a public comment period on this change of business practice. Rick stated that at the present time, a public comment period has not been addressed. Rune asked that the FAA have a comment period so that all stakeholders have an opportunity to review the details of the change and provide comments back to the FAA. John Moore, Jeppesen, suggested that a Notice of Proposed Policy (NPP) could be published in the Federal Register to inform the public of the change and to solicit public comment. Valerie agreed to take this recommendation back to FAA management.

Lev Prichard, APA, inquired if the digital editions of the VFR charts are updated and published more frequently than the paper editions? Rick responded that for now, the digital publishing cycle mirrors the paper publishing cycle. Intermediate changes are published only via textual notice in the Chart Bulletin section in the Airport Facility Directories. The long term goal is to publish all the charts on a 56 day cycle.

Rich Boll, NBAA, asked if those long term plans included a single, master digital raster VFR chart. Rick stated that at present, the FAA does not have plans for generating a master digital chart.

**ACTION:** Rick Fecht, AJV-5223, to provide an update at the next ACF.

NOTAM Briefing

Ernie Bilotto, AJR-B11, briefed the issue. Ernie discussed the ongoing transition of the FAA NOTAM system to the ICAO compliant Federal NOTAM System (FNS). Ernie highlighted two changes to the system that are to take affect by the end of CY2015. The first is a change to how international NOTAMs pertaining to hazardous areas are issued. The NOTAM identifier will be changed from KZZZ to KIZC on 1 November 2015. This change will make these NOTAMs easier to sort and identify. There are approximately 20 subject NOTAMs in the system currently and all will be migrated to the new identifier.

The second change to the NOTAM system, captured in FAA NOTAM Order JO Order 7930.2, version Q, effective 15 December 2015, requires that Estimated Time of Cancelation (EST) NOTAMS be subject to auto cancellation to better align with ICAO practices. At this same time, the few remaining Until Further Notice (UFN) NOTAMs will be cancelled and either republished with effective dates or permanently removed.

Ernie stated that the next version of the NOTAM order, version R, has an expected publication date of September 2016 and subsequent updates to the order are anticipated every 7 months.

Lev Prichard, APA, expressed concern over the volume of NOTAMs that pilots must deal with and how problematic that has become. Lev emphasized that the huge volume of NOTAMs in the system can result in
a pilot missing important information. Ernie responded that they understand the problem, but the volume pilots are seeing is due in part by the airlines requesting to have as much information available as possible. A balance between supplying all pertinent information and over populating the NOTAM system is a known dilemma.

Rich Boll, NBAA, commented that part of the issue is the lack of an ability to properly sort NOTAMs. Rich suggested that NOTAM search engines, such as NOTAM Search are available and helpful.

Ernie suggested the formation of a workgroup comprised of industry stakeholders and the FAA. A workgroup signup sheet was circulated and supplied to Ernie so that a workgroup, independent and not sanctioned by the ACF, could be established by the NOTAM Office.

**ACTION:** Office of NOTAMs will provide future updates to the ACF as warranted.

**Publish Electronic Form of MVA Charts**

Jeff Lamphier, AJV-564, provided an update on the release of MVA charts in an electronic format. Jeff stated that MVA charts are available to the public via URL: [https://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/mva_mia/](https://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/mva_mia/) in two formats, PDF and AIXM 5. The AIXM 5 files are to be published in conjunction with the PDF files for all future MVA/MIA projects.

John Collins, GA Pilot, inquired as to whether the AIXM files were georeferenced. Jeff responded that yes, the AIXM files are georeferenced and showed an example of how such files are coded.

Gary Fisk, AJV-82, asked if the release of these files is coordinated prior to public release. Jeff replied that all MVA/MIA files are fully coordinated with ATC and are not released until the effective date on which the new maps are implemented by the subject facility.

**Transport Airplane Performance Planning Update**

Bruce McGray, AFS-410, provided a briefing on the Transport Airplane Performance Planning (TAPP) program. Bruce discussed the results of the TAPP working groups work to address the issue of industry confusion regarding departure climb gradient compliance. Details can be found in the presentation.
V. Outstanding Charting Topics

07-01-195 Charting & AFD Information Re: Class E Surface Areas

Paul Gallant, AJV-113, reviewed the issue. Paul stated that the new AIM guidance was submitted regarding the specifics of Class airspace and associated extensions when an airport’s air traffic control tower closes. Paul anticipates publication of the new AIM guidance for the 26 May 2016 edition of the AIM.

Paul stated that AIS identified a number of mismatches in the airspace legal descriptions and has provided a list to AJV-113 to aid in correcting the issue. To date, only 20% of the legal descriptions have been corrected. Those that remain have gone out to the services centers to be worked and will be published when received by his office.

STATUS: OPEN

ACTION: Paul Gallant, AJV-113, to report on publication of revised AIM guidance and progress in the update of the airspace legal descriptions.

13-01-261 Alaska Ground Based Transceivers (GBT) Locations

Valerie Watson, AJV-553, briefed the issue. Valerie stated that she has been in further contact with FAA General Counsel assigned to the ADS-B program data release. The FAA General Counsel has been working both the ACF request and a Freedom of Information Act (FOIA) request for release of ADS-B locations.

Valerie received word from legal that the FOIA office does not concur with the objection to release the data. There is no information yet as to how or when the information will be released.

Valerie stated that she would provide the ADS-B and FOIA office contact information to John Collins, GA Pilot, the original proponent of the issue and asked if this item could be closed. John thanked Valerie and agreed to closing the item.

STATUS: CLOSED

13-01-262 Airport Facility Directory (AFD) Depiction of Traffic Pattern Altitudes

Valerie Watson, AJV-553, reviewed the issue. Rick Mayhew, AJV-533, stated that the past policy was to populate the NASR Traffic Pattern Altitude (TPA) data field only when the traffic pattern is other than standard. Rick reported that NFDC is ready to populate all TPAs, however they first need to secure a source for the data.

Valerie asked if the data is populated on the 5010 form and whether NFDC can use that as the source. Rick stated that they are only populated on this form if they are “other than standard”. He suggested that since the standard is subject to confusion and misinterpretation, NFDC could ask the airport inspectors who fill out the 5010 forms to begin to populate this field for all altitudes.
Rick accepted the commitment to engage with the Office of Airports for a source for this data.

**STATUS: OPEN**

**ACTION:** Rick Mayhew, AJV-533, to report on dialog with the Office of Airports and Airport Inspectors regarding securing a source for all Traffic Pattern Altitudes in NASR.

**13-01-266 Standardized Depiction of Altitude Restrictions on Bottom, Top and Maintain Altitudes on Standard Terminal Arrival (STAR) and Standard Instrument Departures (SIDs)**

Valerie Watson, AJV-553, reviewed the history of the issue. Valerie stated that 2/3 of published Standard Instrument Departure (SID) Procedures now depict a Top Altitude. The process to add a Top Altitude to the remaining charts is ongoing.

Valerie also reported that basic guidance for Bottom Altitudes on Arrivals has been captured in the Draft of FAA Order 8260.19G and there is a charting specification in place though implementation has not begun nor been finalized. The topic of Bottom Altitudes is still under discussion in the PARC PCPSI and may require further revision. It was decided that this issue may be closed in this forum and if changes to prior decisions are made in the future, the subject will be revisited.

**STATUS: CLOSED**

**13-01-270 Stepdown Fix Chart Notes**

Kevin Bridges, AIR-131, provided an update. Kevin stated that the USIFPP suggested the topic be closed due to there being no means to classify the misleading information and there is no way to identify aircraft that have VNAV systems. Kevin added that there is a very high probability that airplanes with FMSs with baro-VNAV systems authorized for use on LNAV/VNAV line of minima also have GPWS or TAWS per 91.223. GPWS/TAWS can be considered as mitigation for a $10^{-3}$ baro-VNAV system used in this case for a $10^{-5}$ operation.

Rich Boll, NBAA, stated that there is one part of the recommendation that still remains unresolved regarding the addition of circling to the *LNAV only* note. Discussion focused on whether circling should be addressed in the *LNAV only* note. It was noted that details on what minima apply to non-precision approaches, including circling, are covered in the Aeronautical Information Manual (AIM), however, there seems to be pilot confusion regarding the applicability of the note.

Rich stated that there are two options: take the *LNAV only* note off the chart entirely or change the note to read *LNAV and Circling only*. There was a lengthy discussion on the best course of action. The sentiment in the room shifted to the issue being not about charting and inclusion of a note to the real need for pilots to be properly trained to fly the procedure. It was reemphasized that for non-precision (meaning non-vertically guided) approaches, step down fixes apply and that needs to be instilled in pilots through training. In the end, the consensus was that all *LNAV only* stepdown notes and the similarly used *LOC only* stepdown notes should be removed from the FAA Order 8260.19 guidance and from the charts.

Rich agreed to look at the AIM language to determine whether additional guidance is required.
Tom Schneider agreed to initiate necessary changes to the FAA Order 8260.19 guidance. Brad Rush stated that once the guidance has been published, the note will be removed from the charts as the 8260 series procedure source forms are amended for other reasons, meaning that it will likely be a long time before all the notes will be removed.

**STATUS: OPEN**

**ACTION:** Tom Schneider, AFS-420, to report on progress made on modifying FAA Order 8260.19 revised to remove *LNAV only and *LOC only stepdown notes.

**ACTION:** Bruce McGray, AFS-410, and Rich Boll, NBAA, to review AIM guidance and report on possible revision.

**14-01-274 Solar Power Plant Ocular Hazard Symbol on Aeronautical Charts**

Valerie Watson, AJV-553, reviewed the topic. Valerie commented that at present, there are two solar power plants that have been depicted on the FAA VFR Sectional charts with the existing “ocular hazard” symbology. The issue that remains is the sourcing and databasing of solar fields deemed to be Ocular Hazards for pilots.

Mike Wallin, AJV-5331, stated that NFDC is currently looking into how to database the areas in NASR. (The two current areas were published via NFDD “add-on” pages.) Mike said that for the data to be published, Solar Power plants would have to be submitted to NFDC by the Service Areas via the portal. Also, any future modifications would have to come in through the same means from the service centers.

Valerie asked about the source of the currently charted ocular hazard areas. Rick Fecht, AJV-5223, stated that the requests to date have come in via special request from the Western Service Center. The areas are not currently databased in NASR. Rick Mayhew, AJV-533, commented that it may be possible to expand FAA Order 7900.3 for special activity areas to include the housing of these areas. Rick also stated that NFDC can reach out to the service centers to see if they have additional areas where ocular hazard should be charted.

Discussion shifted to what altitudes solar plants that operate utilizing focused mirrors impact pilots. Jolda Reed, AJV-W21, stated that pilots can suffer glare at any altitude. She said that at Ivanpah Solar Power Facility, pilots have reported ocular hazard up to 380FL and 180 miles away from the facility.

Rune Duke, AOPA, suggested that the FAA look into using the ocular glare tool; Significant Glare Analysis Tool ([https://share.sandia.gov/phlux](https://share.sandia.gov/phlux)), currently used for Solar Panel installations at and around airports.

Discussion then shifted as to what the FAA’s reporting requirements are for companies looking to construct solar sites. It was stated that the only real requirement is when there is an obstacle constructed at or above 200 feet AGL. There was a question regarding what information is included on the construction notice when an obstacle is submitted. Rick Mayhew will look into whether the information submitted on construction notices provides an indication that a solar farm is being constructed. The final consensus was that the Service Areas will need to submit to NFDC the areas that they deem to be ocular hazards to pilots and are thus “chart-worthy”. NFDC cannot take the responsibility for making this decision, nor can the charting teams. Rick will pursue with the three Service Areas to set up a source submission process.
STATUS: OPEN

**ACTION:** Rick Mayhew, AJV-533, will reach out to the Service Areas regarding submission of solar farms required for charting.

**ACTION:** Rick Mayhew, AJV-533, will review FAA Order 7900.3 to see if it can be expanded to include ocular hazards for databasing in NASR under the newly developed Special Activity Area resource.

**ACTION:** Rick Mayhew, AJV-533, to research what information is submitted on a construction notice with regard to solar plant construction.

**14-01-276 Removal of Non-Alaska Facility Information from Alaska Supplement**

Valerie Watson, AJV-553, reviewed the issue. Bob Carlson, AJV-5641, reported that with the automation of the Alaska Supplement, the supplemental Non-Alaskan information (specifically requested by the military and AOPA) will remain in the book, but will separated into a non-Alaska section. Bob said he had spoken with Rune Duke, AOPA, and Marshall Severson, AJR-BAL, and they were agreeable to that solution.

Lynette Jamison, AJR-B1, commented that there is still a lot of inaccurate data in the AFDs. Bob replied that the airport information in the AFD is updated based what is in databased in NASR. If there is incorrect information, corrections need to be submitted to NASR from the airport – when incorporated into NASR, those revisions will be reflected in the supplements.

**STATUS: CLOSED**

**14-01-277 Discontinuation of World Aeronautical Charts**

Guy Copeland, AJV-522, reviewed the topic. Guy reviewed the history of the World Aeronautical Charts (WACs), illustrating how demand for the WACs over the past few years has been declining to levels that no longer make it economically viable to continue production of the chart series. Guy added that contributing factors to the decline of the WACs was the migration to digital charts, use of electronic flight bags (EFBs), moving map displays and other related technologies.

Based on feedback, Guy stated that there was a notice of the policy change published in the Federal Register announcing the elimination of the entire WAC series and soliciting questions and comments from users. He stated that the Visual Charting Team will be able to redirect resources previously dedicated to WAC production to other Visual charting initiatives.

Guy stated that the proposal to mitigate the loss of the WACs is to develop an Alaskan VFR Wall Planning chart and produce two Caribbean VFR charts to provide coverage in those areas. Regarding concerns for Mexican and Canadian areas that were previously covered by the WACs, Guy stated that pilots will be
encouraged to use foreign, state-sponsored aeronautical charts when navigating in those regions. Canadian and Mexican charts exist and are commercially available.

Projected dates for WACs discontinuance were provided, subject to change.

Rune Duke, AOPA, stated that they disagreed with the FAA’s publication of an announcement to discontinue a chart series without the opportunity for formal public comment. Subsequent to publication of the announcement, AOPA conducted a survey of their members and 745 responded that they valued and utilized the WAC charts. AOPA has been working with the FAA to establish a collaborative process on addressing the charting concerns and needs of pilots. AOPA looks forward to continuing that collaborative process as the FAA works through the process of discontinuing the WACs.

Rich Boll, NBAA, inquired if all of the U.S., including Alaska, is covered by a VFR sectional chart. Guy responded that yes, the U.S. and Alaska are covered by the VFR sectional charts.

Rich then emphasized that the regulations require that transport aircraft have both IFR and VFR charts in order to operate in accordance with the regulations, specifically 14 CFR 91.503 (a)(4). The regulation requires operators of these aircraft to carry pertinent aeronautical charts, a purpose for which the WAC product is uniquely suited. While Sectional charts meet this need, the number that must be carried on the airplane becomes problematic. As result, NBAA is concerned about the loss of the WAC series of charts to their members.

Rich went on to state that one key issue that pilots face with the use of current digital VFR and IFR charts is that they are stitched together by 3rd party charting application providers. Along the boundaries where charts are jointed, charted information sometimes gets missed, dropped or deleted entirely. He emphasized that these data losses are a huge issue. Rich suggested that the FAA look into generating one continuous digital VFR aeronautical chart for viewing on EFBs. NBAA would like to see the funds freed up by the discontinuance of the WACs be put towards generating a seamless electronic VFR chart.

Guy, in response, stated that VFR charts are currently still a paper product. The digital products are a snapshot of the paper product. Guy also stated that the FAA is working toward data driven charts which may solve many of these issues. Rich responded that digital charts are a long term goal and stated that something is needed in the interim. Guy stated that he would take the recommendation back for further discussion, but in the meantime, the FAA is working on the stitching issues. He explained that work has begun to clean up areas on the paper charts where they are jointed to help ensure that information is not lost.

Valerie Watson, AJV-553, asked if FAA Enroute Charting is aware these types of overlap and data loss issues with adjoining charts, and if so, if they are they looking into it. Bob Gifford, AJV-5211, stated that he was not aware of the problem, but would enquire.

Steve Woodbury, Flight Safety International, asked if there were plans to update guidance regarding the discontinuation of the WACs. Guy responded that all current references to the WAC series will be removed from the December 2015 version of the Aeronautical Information Manual (AIM). A future AIM update will include information regarding the new VFR products under development.
Rune inquired if the FAA has plans to provide information to pilots regarding which VFR Sectionals would cover the discontinued WACs. Guy replied that there was currently not a plan to provide such a graphic, but that VFR Charting will look into producing a textual crosswalk charting notice that will correlate WAC coverage to Sectional chart coverage. Subsequent to the meeting, the following Notice was posted on the AIS website: http://www.faa.gov/air_traffic/flight_info/aeronav/safety_alerts/media/VIS_15-04_CN_WAC_to_Sectional_Crosswalk.pdf

Bob Lamond, NBAA, stated that the process for the discontinuation of the WACs did not occur as expected and as it was publicly announced. Bob emphasized that while the WACs may not be heavily used, they still have value. He encouraged the FAA to continue to discuss and work with industry to find solutions to these issues, especially regarding areas that directly impact how operators are to comply with elements of the regulations that require charts in the cockpit. NBAA understands the cost involved in producing the WACs. Pending the development of a robust, data-driven VFR chart option that is an acceptable alternative to the Sectional chart, NBAA believes that the loss of the WAC is best addressed by furnishing EFB software providers with a mosaic product that is suitable to their use. Bob added that NBAA believes this holds true not only for VFR charts, but for IFR charts as well. This would serve as a good alternative pending the full, data-driven chart option.

Bob expressed that NBAA and AOPA’s comments represent frustration from pilots about removal of products and tools without a suitable alternative or acceptable electronic replacement. Al Ball, Netjets, echoed this sentiment. Both Rune and Bob stated that their organizations hope to continue working with the FAA to improve the services and products to meet the needs of pilots. Guy replied that the FAA is engaged and also wants to work collaboratively.

STATUS: CLOSED

14-01-279 Naming of FAA Certified, National Disseminated AWOS-3 Systems on Private Use Airports

Valerie Watson, AJV-553, reviewed the issue. Rick Mayhew, AJV-533, briefed on actions taken by NFDC to address the issue. Rick stated that he and Valerie are going to work together to put together a list of all ASOS/AWOS systems that do not share the same location identifier as a public-use airport. They will submit that list to the non-federal weather office for verification. If they are certified for public use, they can be shown on the charts.

Gary Fiske, AJV-82, asked if these non-Federal AWOS systems are broadcasting over VHF frequencies, and if they can be picked up by pilots. Rick commented that yes, such stations could be picked up by pilots and that these stations utilize a frequency licensed by the FCC. What needs to be determined is whether these systems are inspected and maintained to FAA standards. If so, all agreed they should be charted.

Rune Duke, AOPA, commented that pilots see tremendous value in having access to any additional sources of weather information.

STATUS: OPEN
**ACTION:** Rick Mayhew, AJV-533, and Valerie Watson, AJV-553 to report back on their findings regarding the ASOS/AWOS list.

**14-02-280 MEA Usage on SIDs**

Valerie Watson, AJV-553, reviewed the item. Tom Schneider, AFS-420, provided an update. Tom stated that he has written guidance for Draft FAA Order 8260.46F that supports publication of crossing altitudes at specific fixes and a prohibition against establishing MEAs (segment altitudes) that have been artificially raised to support ATC separation needs. The Order has been circulated for approval and will be published within the next 90 days.

Tom stated that he will also insure that FAA Order 8260.19 for Arrivals and FAA Order 8260.46 for Departures are in agreement.

**STATUS: CLOSED**

**14-02-282 VASI PAPI Differences**

Brad Rush, AJV-54, briefed the issue. Brad stated in his discussions with the FAA Lighting Systems Office, he was told that there will not be an update to the Order to change the VASI Obstacle Clearance Surface (OCS). The office stated that changing the VASI distance would require that all VASIs be resurveyed for compliance, and that would be too costly. Brad stated that he would continue to work with AFS-410 on revising the language on in the AIM to clarify the different surface areas.

Michael Stromberg, Air Wisconsin, asked if all new VASI systems could be installed using the PAPI OCS. Brad stated that the FAA no longer installs new VASI systems.

**STATUS: OPEN**

**ACTION:** Brad Rush, AJV-54, to report on work on revising the AIM language regarding PAPI and VASI Obstacle Clearance Surface definitions.

**14-02-283 Charting of Transmission Lines on VFR Charts**

Valerie Watson, AJV-553, reviewed the issue. Valerie stated that the United States Coast Guard (USCG) was to provide findings linking FAA transmission line chart symbology to accident incidence. There were no findings submitted by the USCG and they were not in attendance at the meeting. Valerie proposed to close the issue. There were no objections.

**STATUS: CLOSED**
**14-02-284 DME Facilities – Charting and MAGVAR Issues**

Valerie Watson, AJV-553, reviewed the topic. Dale Courtney, AJW-292, informed the forum that since the last ACF, there had not been any meetings of the DME Workgroup. Dale stated that the scope of the VOR MON has changed due to the decrease in numbers of VORs to be decommissioned.

One of the recommendation is to chart the approximately 52 DMEs that will remain as a result of VOR decommissionings in MON Phase 1. Dale voiced the WG recommends that DMEs be charted using the square box symbology, shall retain the name and ident of the parent VOR/DME, will (when necessary) have a facility box with name, ident, morse code, channel and paired frequency. DMEs used as waypoints will be shown utilizing the standard hierarchy concept with the DME symbol and associated text. It was agreed that as DMEs have no azimuth, a magnetic variation of zero will be assigned.

Rich Boll, NBAA, inquired if these DMEs could be utilized by ATC. Dale stated that yes, ATC could use to them as a waypoint. Valerie voiced that as with any NAVAID, these will be entered into the NAVAID resource in NASR as NAVAID type DME so the 3-character idents will be in the FMS and can be used as waypoints.

Gary Fiske, AJV-82, stated that ATC is against charting the DMEs if the sole purpose is for them to be used for DME backup. Dale commented that not charting them would result in the charts being inconsistent with the FMS. Ted Thompson, Jeppesen, agreed that if they are not all charted, it will cause confusion, both in creating a mismatch between charts and the FMS and for NOTAM clarity. Valerie stated that as with any NAVAID, if a DME is used on a procedure, airway or as part of a makeup, in the structure (say Enroute Low or High) of the chart product, it will be depicted.

There was consensus that for Phase 1, since there are only 52 DMEs and they are already charted VOR/DMEs, they should be charted as DMEs after the VOR is decommissioned. This policy may be revisited as the VOR MON decommissionings continue and the possible proliferation of newly commissioned DMEs commences.

Rick Mayhew, AJV-533, stated that NFDC can capture what is necessary for DMEs to be charted in NASR.

The DME Workgroup is made up of the following individuals:

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**STATUS: OPEN**

**ACTION:** Valerie Watson, AJV-553 to work with Dale Courtney, AJW-292, to develop a charting specification for DMEs.

**15-01-289 Adding “CPDLC” Information to Airport Diagram and Terminal Procedures and Updating the AFD**

Valerie Watson, AJV-553, reviewed the topic. Valerie stated that the charting specification is in place. She showed the group chart and AFD entry examples of how CPDLC would be depicted on FAA products.

Rick Mayhew, AJV-533, stated that the CPDLC information will be published in NASR (and the NFDD) as a Tower Services entry.

Lynette Jamison, AJR-B1, stated that there are complexities with CPDLC that were not initially apparent. Tech Ops has commented that CPDLC utilizes two different services and systems. This adds a layer of complexity in issuing a NOTAM because CPDCL services may be available through one system, but through another. The NOTAM office is considering how this should be handled.

On the subject of digital communications, Rich Boll, NBAA, presented a briefing on Terminal Weather Information for Pilots (TWIP). This is a digital weather reporting service that is installed at a number of major airports. TWIP provides pilots text information and a simple graphic of weather activity that may impact airport operations. Rich recommends that TWIP availability be depicted on IAPs, DPs and STARS in the same way CPDLC will be shown. Rich also recommends that the outdated AIM guidance regarding TWIP be updated.

Ted Thompson, Jeppesen, commented that Jeppesen has in the past attempted to include digital communication services on the charts and expressed that is has been problematic. He expressed that reliable source for the information and ensuring that it is maintained has been difficult.

Valerie stated that as technology advances and more communications are transmitted digitally verses vocally, we need a long term plan for sourcing, databasing and publishing digital communications. Valerie asked the audience if the charted communications listings should be expanded to include TWIP. It was agreed that digital services would be of value on the charts. Valerie stated that she would attempt to track down the appropriate office within the FAA that oversees digital communication services and research the issue. She will also attempt to determine the FAA office responsible for update of the AIM TWIP guidance and task them with its revision.
STATUS: OPEN

**ACTION:** Valerie Watson, AJV-553, will research digital communications availability, usage, source.

**ACTION:** Valerie Watson, AJV-553, will work to see that the TWIP AIM guidance is updated.

**15-01-290 VFR Charting of Airport Symbol – Services Availability**

Rich Fecht, AJV-5223, reviewed the topic. Rich stated that the IACC Requirement Document has been signed and is ready to implement. Visual Charting is parsing through the data to get a list of airports that meet the fuel availability requirements and will soon start updating the VFR charts. Rich anticipates that the updated airport fueling information to be reflected on all charts within about two years. This change will affect public airports only.

STATUS: CLOSED

**15-01-292 Removal of Grid Variation from U.S. IAP Charts**

Kevin Bridges, AIR-131, stated that he received no objections from Alaskan users to the removal of Grid Variation. Valerie Watson, AJV-553, said that she would move forward with a charting specification change to remove grid variation from the charts. She reiterated that if the Air Force needs to retain grid depiction on their charts for use in the Antarctic, they can do so, but it will not affect FAA charting standards.

STATUS: CLOSED

**15-01-293 STAR Terminus Point Standardization**

Valerie Watson, AJV-553, reviewed the issue. Valerie showed the audience two sets of prototypes. The first showed STAR terminus points with runway and airport identifiers and the suggested procedure source document revisions that would reliably support the charting. The second set of prototypes also included an example bottom altitude along with the terminus identifiers. There were positive reactions to the addition of the runway identifiers, however strongly negative reactions to the addition of the bottom altitudes at the terminus.

Lev Prichard, APA, stated that he likes the runway information associated with each terminus. However, having such runway information on all STARS may be problematic. Lev added that there should be no effort made to chart the bottom altitudes in this manner.

Brad Rush, AJV-54, stated that the depiction of the bottom altitudes will cause pilot confusion and it is also a problem because there is not a way for them to be properly coded.
Rich Boll, NBAA, commented that the end result of this idea should be a reduction in congestion and the number of notes depicted on the chart.

Ted Thompson, Jeppesen, commented that the idea has merit; however, he feels more work is required. He suggested that AIS develop more concept charts on a variety of different arrivals.

Rick Dunham, AFS-420, stated that the criteria for STARs is in the process of transitioning to Flight Standards. PARC recommendations are being reviewed. It is anticipated that bottom altitudes will not go on STARs because of the potential for pilot confusion and coding issues.

Aside from altitudes, consensus of the group was strongly in favor of STAR terminus identification text shown at the terminus points on the planview of an Arrival chart rather than “buried” in the arrival text. Kevin Allen, American Airlines, and Lev Pritchard, APA, offered to make chart recommendations to Valerie for prototype charts for the next ACF.

**STATUS: OPEN**

**ACTION:** Valerie Watson, AJV-553, to create additional prototype STAR charts depicting terminus identifiers.

**15-01-295 Charting of Airports for the MON**

Vince Massimini, MITRE, reviewed the issue and stated that since the last ACF, the Workgroup was formed, but did not convene because he was awaiting the release of the list of proposed MON airports. Now that the list of airports has been released, Vince anticipates holding the first meeting of the Workgroup in the coming weeks.

Kevin Bridges, AIR-131, inquired about the impact MON Airports would have on pilots filing for alternate airports. Vince replied that there is not going to be a change to alternate filing requirements. Pilots will not have to file for a MON airport as an alternate for any flight operations. Kevin expressed his opinion that, for safety, alternate filing should be based on the MON. He voiced that the FAA will need to ensure that there is very clear guidance in the AIM and the IPH on MON operations.

Vince reassured the audience that those involved in the MON process are thoroughly discussing these and a number of related concerns. He stated that there are a variety of MON issues to be finalized before any language can be inserted in the AIM. Once these issues are finalized, language will be added to the AIM and other publications accordingly.
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<thead>
<tr>
<th>Name</th>
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**STATUS**: OPEN

**ACTION**: The MON Workgroup will meet to discuss the issues and Vince Massimini, MITRE, will report back.
**VI. New Charting Topics**

**15-02-296 Charting of Unmanned Free Balloon Activities and Amateur Rocket Activity Areas**

**Part I: Charting of Amateur Rocket Activity Areas**

Paul Eure, AJV-113, introduced a recommendation for the charting of amateur rocket activity areas. Paul recommends that use of the newly introduced rocket symbol that was approved by the IACC to indicate space launch activity areas be expanded to include amateur rocket activity areas. Paul said that there are specific sites where amateur rocket launches are conducted by such government organizations as NASA and DoD and by commercial rocket manufacturers. Paul estimates that there are over 50 large, high-powered rocket launches per year. In addition to these organizational rocket launches, there are amateur rocket events at specific launch sites that conduct activities with rockets that may climb from 3,000 feet up to 484,000 feet. These amateur rockets are high power, and, in some cases, multistage rockets.

Paul stated there is currently one amateur rocket site in Nevada that he believes should be charted with the rocket symbol to enhance situational awareness for pilots. Black Rock, NV is a major amateur launch site, which when active with a TFR, has a protected airspace radius of 17NM. Paul emphasized that amateur rockets are not considered space operations, but that doesn't lessen the danger associated with such activities to pilots and aircraft.

Rich Fecht, AJV-5223, suggested that Visual Charting could use the current rocket symbol for Black Rock, but that there would need to be a specification change in order to expand the definition of the symbol to include amateur rockets.

Valerie Watson, AJV-553, asked why these areas need to be charted if a NOTAM and TFR is always released for major launches. Paul stated that a TFR is required for those launches that are planned to fly at or above 18,000 feet. However, launches that are projected to fly below that altitude can be launched without a NOTAM, using spotters.

Rune Duke, AOPA, asked how it would be determined what sites qualify for a symbol. Paul responded that sporadic activities would not qualify. Guy Copeland, AJV-522, stated that before Black Rock and other similar amateur sites can be charted, criteria needs to be devised to establish a threshold whereby such facilities could qualify to be charted.

It was suggested, and Paul agreed, that Flight Standards should be involved in the establishment of criteria for publication/charting of rocket activity areas. Number and frequency of activity, altitudes, contact information, etc., should possibly be considered. Paul will work with AFS to attempt to define criteria.

Rick Mayhew asked if such launch facilities are included in the AFD. Valerie stated that publication of a text entry in the Notices section of the AFD is something that could be accomplished quickly while a long term charting solution is investigated. Paul stated that that was something that he would like to investigate further.
Part II: Charting of Unmanned Free Balloon Activities

Paul Eure, AJV-113, introduced a recommendation for the depiction of unmanned free balloon activity areas on VFR charts. Paul stated that at present, there is nothing on the charts to indicate areas of high balloon launch activity. The balloons launched are designed to travel up to 100,000 feet often carrying cargo. The most common, regularly scheduled balloon launches are associated with weather balloons launched at 07h00 and 19h00 every day. There are 108 weather balloon launch sites and the weather services launches over 75,000 balloons per year.

Paul stated that, in addition to weather balloons, Google, NASA and others also launch balloons in a similar manner and to extremely high altitudes. Paul stated his belief that this is a safety of flight issue and pilots need to know where this activity is taking place. Balloons such as Google’s do not have restrictions regarding terms of launch, have no transponder or lighting requirements and no payload restrictions. The only restrictions in place pertain to operating near Class B airspace and that launch companies have to provide a notice of launch.

Paul commented that Title 14, Part 101 – Moored Balloon, Kites, Amateur Rockets and Unmanned Free Balloons needs to be updated. The last time Subpart D, Unmanned Free Balloons was revised was 1964.

Ted Thompson, Jeppesen, commented that the charting of these launch sites at this time is premature. Regulation needs to come before charting so that criteria can be established. He also pointed out that this request is to add something to the charts that is dynamic in nature – this is difficult on a 224 day update cycle. He suggested that publication of Special Notice might be more appropriate.

John Moore, Jeppesen, commented that written criteria needs to be established before there is any discussion of charting. Once criteria is established, then you have to develop how such sites, rocket or balloon, are to be documented. Only after these steps are taken should charting be considered.

Guy Copeland, AJV-522, stated that if Flight Standards provides a threshold criteria for charting and the areas are published in NASR (or as NFDD add-on pages), Visual Charts could likely accommodate this request as long as the threshold for charting did not cause undo congestion to the VFR products.

Rune Duke, AOPA, asked if there was any data regarding an increase in aircraft-balloon incidents. Paul replied that yes, there have been 12 incidents in the last two years. Rune asked if those incidents were in the vicinity of the launch sites that Paul would like to see charted. Paul responded that he did not know the locations of the incidents.

**STATUS: OPEN**

**ACTION:** Paul Eure, AJV-113, will work with Flight Standards on developing criteria for charting amateur rocket and unmanned free balloon launch sites on Visual Charts. He will also consider submission of Notices for publication in the AFDs.

**ACTION:** Rick Mayhew, AJV-533, and Valerie Watson, AJV-553, will coordinate with Paul Eure regarding publication in the Special Notices section of the AFD.
15-02-297 Charting of HILPT Maximum Holding Altitude

Rich Boll, NBAA, briefed the new recommendation. Rich recommends that where a maximum holding altitude has been established for a hold-in-lieu of procedure turn (HILPT) holding pattern, it should be depicted on the approach chart so that both pilots and ATC are aware of the restriction. Rich emphasized that ATC does not readily have access to FAA 8260-2 forms (on which the maximum altitude would be documented) so they may not be aware that a maximum holding altitude applies. Rich stated that it is unknown how large the issue is, however he showed, as part of his presentation, several examples where maximum holding altitudes apply to a HILPT and they are not published on the chart. He stated that this is not likely a problem at larger fields, but may be an issue at smaller airports.

Rune Duke, AOPA, stated his support for charting these altitudes, agreeing that pilots need to know this information.

Michael Stromberg, Air Wisconsin, asked how a pilot would get the 8260-2 forms to look up this information. Rick Mayhew, AJV-533, stated that some but not all 8260-2 forms are available online. Valerie Watson, AJV-553, stating that if it is decided that the maximum holding altitude needs to be charted, it would have to be documented on the on the 8260 series procedure source form, not merely the 8260-2 holding pattern form.

Tom Schneider, AFS-420, stated that FAA Order 8260.19 would need to be revised to specify any maximum holding altitudes that require charting. If/when the decision is made to chart this information, Tom will take an action IOU to make necessary changes.

Rich commented that if there are any changes to the charts to include maximum holding altitudes, there would also have to be an education piece for the AIM.

Discussion shifted as to where such maximum holding pattern altitude should appear on the chart, the profile view or planview, or both, and how it should be depicted in the profile. There was consensus that it should be depicted in both the planview and profile. Valerie agreed to create concept charts for the next ACF with various depiction options.

**STATUS: OPEN**

**ACTION:** Valerie Watson, AJV-553, to draft prototype charts for next ACF.
15-02-298 Charting GLS DMax (Service Volume)

Ron Renk, United Airlines, briefed the issue. Ron first described to the audience the process of how a GLS approach is flown at Houston. Ron stated that United has flown over 3,000 GLS approaches and an unanticipated issue has surfaced. ATC can expect a pilot to join the final approach course (FAC) outside the service volume of the GLS ground station. Beyond the scope of the GLS signal, pilots must use LNAV/VNAV to fly the procedure. Once within the service volume of the GLS signal, they can use the Approach (APP) mode to complete the approach. Since pilots don’t know the service volume limit, they have no way to know if they should use LNAV or APP mode to join the FAC. Ron recommends that the GLS service volume limit, or DMax, be charted on GLS procedures.

Catherine Graham, AFS-470, stated that the GLS service volume is sourced on the airport detail sheet that is used by the procedure designer. She stated that it is documented as a distance from the antenna. Ron said that it would need to be converted to a distance from threshold for charting.

Ron proposed a couple of ideas on how the service volume could be provided to pilots on the charts. His first idea was to provide a feather-like representation (like a localizer) that would go out as far as the service volume for a given approach. His second idea was to add an arc at the point along the FAC at the service volume limit.

Discussion continued regarding different depiction ideas for showing the DMax limit. Suggestions included showing it as a note, or as a line or symbol across the FAC. The preference seemed to be indicate the DMax limit as a note.

Brad Rush, AJV-54, suggested the establishment of a waypoint on the FAC at or just inside the DMax limit. The point would include an indicator of (DMax) with the waypoint name. This point would be indicated for charting on the Form 8260-3 to support charting and database coding. There was consensus of support for this suggestion. The audience agreed both that the GLS service volume should be depicted on the charts and that establishment of a labeled waypoint on the planview would be a clear method to show it.

Valerie Watson, AJV-553, agreed to create prototype charts for the next ACF for the depiction of a waypoint located at the service volume limit (or just inside) accompanied by text indicating “(DMax)”. Catherine said that she would work on determining the correct DMax fix placement and coordinate with Tom Schneider on changes that would be necessary in FAA Order 8260.19.

STATUS: OPEN

ACTION: Valerie Watson, AJV-553, to develop prototypes for the depiction of a DMax waypoint on GLS procedures for consideration at next ACF.

ACTION: Catherine Graham, AFS-470, and Tom Schneider, AFS-420, to work on FAA Order 8260.19 revisions to support establishment of a DMax waypoint on GLS procedures.
15-02-299 Add INOP Components Minimums Adjustments to IAPs

John Collins, ForeFlight, briefed the topic. John stated that current FAA charts show the Inoperative Components Table separate from the charts in the legend pages of the TPP. He stated that this becomes an issue when using an electronic flight bag (EFB) because the pilot may not readily have access to a digital copy of the table from the legend. He recommends that the FAA make the information more readily available to pilots by including a note on the approach charts for standard and nonstandard adjustments to visibility. He pointed out that Jeppesen provides such information on their approach charts.

Kevin Bridges, AIR-131, asked if this was purely an issue with EFBs. John replied that yes, this was an EFB issue, adding that the information the pilot need is not all in one place.

Michael Stromberg, Air Wisconsin, stated that this appears to be a vendor issue related to how the EFB is programmed to utilize FAA charts. He pointed out that a request could be made to the vendor to make that page more accessible.

Valerie Watson, AJV-553, stated that the FAA provides an electronic version of the Inop Components table, but it is not up to the FAA how EFB vendors link or provide the table.

Brad Rush, AJV-54, stated that this doesn’t appear to be a charting issue, but an EFB vendor issue.

After a lengthy discussion, it was decided that as the FAA had no plans to modify their minima depiction with lights-out information as Jeppesen does, that the table is available and thus all necessary information is provided, this is essentially a vendor issue and no action will be taken.

STATUS: CLOSED

15-02-300 Standardize Depiction of Communications on DPs and STARs

Allison Miller, AJV-5612, briefed the issue. Allison asked the ACF to provide recommendations for standard communications that should be charted, when available, on all DPs and STARs. She stated that in the current process there is a disconnect between what is designated for charting in the specifications, what is provided by NASR and what is requested by the facility or procedure developer.

FAA charting policy is to depict basic frequencies as listed in the IACC specifications. Numerical frequencies should not be shown on procedure source documents because frequencies often change and a procedure amendment would need to be processed to revise the frequency. For this reason, the charting teams would like to see all frequencies databased in NASR. Frequencies can be annotated in NASR to clarify the procedures on which they are intended to be used. If the standard initial contact approach control frequency is NOT desired to be utilized on a given Arrival, for instance, the desired frequencies should be databased specifically and annotated with the name of the procedure on which they are to be used.

It was reported that often facilities contact the charting offices and request frequency changes on procedures when the frequencies are not databased in NASR. Allison agreed that Terminal Charting does get
requests for non-databased frequencies to be included on the chart and such requests often come in via email from the center. It was agreed that ATC needs to follow the process and provide the information to NFDC.

Rick Mayhew, AJV-533, stated that for metroplex projects, NFDC has recently begun to add frequencies in NASR that are tied to specific procedures. He stated that Tom Harris is the point of contact for communication in NASR and concerns should be brought to him.

Valerie voiced enthusiastic support for this process and the recommendation was made that when the standard frequencies in NASR are NOT what the facility desires, ATC be advised to send a request to NFDC to add the desired frequencies and tie them to the specific procedures. FAA Terminal charting will follow this procedure and direct ATC to NFDC for unique frequency publication as necessary. Ted Thompson, Jeppesen, concurred and will advise his AIS specialists to do the same.

STATUS: CLOSED
VII. Closing Remarks

Valerie Watson, AJV-553, thanked the attendees for their participation and voiced special appreciation to Lance Christian, NGA, for venue coordination and to the USGS for hosting the ACF.

Notices of the official minutes will be announced via email and provided via the Internet. The two website addresses (CG and IPG) are provided below:


Please note the attached Office of Primary Responsibility (OPR) listing for action items. It is requested that all OPRs be prepared to provide verbal input at the next Forum or provide the Chair, Valerie Watson (with an informational copy to Alex Rushton, Contract Support), a written status update. These status reports will be used to compile the minutes of the meeting and will serve as a documented statement of your presentation.

Appreciation to Jennifer Hendi, AJV-553, for presentation assistance for the CG portion of the forum, conference support pre- and post-conference, and to Alex Rushton, Contract Support to AJV-553, for taking the minutes and conference support pre- and post-conference.

VIII. Next Meeting

ACF 16-01 is scheduled to be held on April 26-28, 2016, hosted by ALPA at their Herndon, VA location.

ACF 16-02 is scheduled to be held on October 25-27, 2016, hosted by Pragmatics, Inc., at their Reston, VA location.

IX. Attachments

a. **15-02 Attendee Roster**

b. **Office of Primary Responsibility (OPR)**