# AERONAUTICAL MOBILE APPLICATION (AMA)

## Draft STATEMENT OF WORK

**19 JUNE 2020**

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## 1.0 (U) INTRODUCTION

(U) The National Geospatial-Intelligence Agency (NGA) requires the continued maintenance, data delivery and support of the NGA developed Aeronautical Mobile Application (AMA), providing our customers the ability to utilize customer hosted aeronautical information and Flight Information Publications (FLIP) products, as well as emerging requirements and world wide data, in the mobile environment. This includes the Aeronautical Application for the Apple iOS, Google Android and Microsoft Windows. Additionally, it includes support applications Aero Data Manager (Apple) and the Aero Data Server (Windows) with associated dataset(s) and databases storage on Amazon Web Services. Established in 2011, the AMA meets customer demands for Aeronautical products in a mobile environment and provides NGA's customers with a tool to advance towards a

paperless operating environment while providing increased capabilities over NGA's current legacy products.

## 2.0 (U) SCOPE

(U) This effort is to continue providing NGA's domestic (Federal and State Governments) and foreign Government customers the capability to utilize NGA Safety of Navigation (SoN) Aeronautical data through an application that acts in a common and consistent manner across three separate operating systems (Apple iOS, Google Android and Microsoft Windows).

(U) This effort is for the maintenance and data delivery for AMA; continue addressing new requirements while leveraging emerging technologies, innovative solutions and processes; all the while, providing SoN.

(U) On a 28-day cycle, NGA and other external sources, such as the Federal Aviation Administration (FAA) and NavCanada provide data to the contractor for AMA. The contractor then will process and modify this data enabling presentation on mobile devices. In order to consistently deliver in between 11 to 25 gigabytes of data each 28-day cycle. Computer coding, software operating systems and supported versions used by the mobile application require maintenance, delivery and sustainment of over 4.5 million lines of code across iOS, Android and Windows operating environments.

## 3.0 (U) APPLICATION MAINTENANCE AND SUPPORT

(U) The government requires contractor assistance in the maintenance and support of current Aeronautical Applications, support applications, user Interfaces, datasets, data structures and ingestion methods. The contractor shall implement a software methodology based on industry standards and emerging technologies.

(U) The contractor will be provided the source code for current versions of DoD Aeronautical Application for Apple iOS, Google Android and Microsoft Windows. Additionally, contractor will be provided source code for Aero Data Server (MacOS & Windows) software with associated dataset(s), as Government Furnished Information (GFI).

(U) This requirement is for the contractor to maintain all application functionality currently available on devices and as directed in this Statement of Work (e.g., adaptive, perfective, corrective and preventative maintenance, etc.). Additionally, the contractor shall maintain all data processing, storage and transferring methods currently in use based on a 14 and 28-day cycle.

(U) Maintenance and support of applications will include but will not be limited to the following items. It will also include any new capabilities and features added during the period of performance of this contract. These features enable aircrew members to execute aviation tasks more efficiently and safely:

- Amazon Web Services (AWS) maintenance and support include, but not limited to, creation, loading and management access to S3 Buckets (U.S. and foreign partners). For foreign partners, limit access based on ten downloads ensuring the control of AWS bandwidth:
    - Bucket management including SCIP support
    - Custom moving map (e.g., TAC, ONC, TPC, JOGs, Helo, etc.)
    - Monitor and track overall AWS bandwidth
- Website support for aeronautical application (Aero App) info website used for supporting Aero App customers. This includes but not limited to the following information: important notices; listing of current versions of Aero App and the Aero Data Server; application download capabilities; Aero App capability / feature information; new data availability status; operating system change notices; data download capability; "What's New" announcements; beta tester information; FAQ's; user's manual; customer registration; automated password rests; NGA contact information; quality feedback access; customer communication via Facebook, LinkedIn and Twitter; training video hosting, GPS compatibility information and the creation of videos for new application launches
- Maintenance and currency of documentation required for white-listing applications and Functional Hazard Assessment support
- Maintain regulatory software updates as directed by program manager (e.g., changing NOTAM system link from DINS to DAIP, updating operating systems)
- Maintain and support MB Tile library to host NAVPLAN charts
- Conversion of Aero App on Windows from WPF to UWP
- Maintain and support wire diagram of Aero App processes
- Maintain and white-list support for:
    - Aero Data Server
    - Aero App (Android, iOS and Windows) updates for each release

## 4.0 (U) DATA DELIVERY

(U) Data delivery consists of delivering an aeronautical dataset for each data cycle (14, 28, 56 or 96 days). Regarding overall mission execution, the Aero App ingests this aeronautical data for each mission flown and the region in which flight crews operate. Data delivery include, but not limited to, the following data sets:

- Geo TIFs – Airport diagrams and Instrument Approach Procedures that are displayed on MultiFunction Displays (MFD) within mission aircraft. Contractor to develop the process to create a secondary geo-referenced FLIP product in a TIF format to ensure a consistent visual

displays between the aircrafts Multi-Function Display (MFD) and what is displayed in the Aero App on their tablets.

- Nav Plan Charts, in MBTile format, broken out by country (e.g., GNCs, JNCs, JOGs, ONCs, TPCs, etc.)
- FLIP, DAFIF, VO's, Aero App, E-IPL DVDs
- Geo-Reference of E-IPLs
- European VFR Charts
- CARDS Data
- Seamless Enroute charts
- Updated Africa charts for every cycle
- Canada VFR charts
- U.S. TAC charts
- U.S. helicopter charts

(U) Additional data elements will be added as the capabilities of the aero app expand in support of additional mission requirements (e.g., Nautical charts, Nav Plan charts, vector data, geo-packaged datasets and other related requirements)

## 5.0 (U) EMERGING REQUIREMENTS

(U) The government requires contractor assistance to investigate, explore and implement emerging requirements and enhancements by leveraging emerging technologies, innovative solutions and processes. This effort is to enhance the DoD Aeronautical Application by providing enhancements and supporting products and services.

- (U) The contractor shall implement new features and capabilities in accordance with emerging requirements as identified by the government.
- (U) The contractor shall implement a software methodology based on industry standards and emerging technologies.
- (U) The contractor shall advise the government on emerging technologies and their potential impact on the Aeronautical Application.
- (U) The contractor shall advise the government on new and innovative solutions and/or processes to improve the Aeronautical Application
- (U) The Labor Categories description for Emerging Requirements is located in Appendix C.

## 6.0 (U) QUALITY ASSURANCE

- (U) The contractor shall implement a comprehensive Quality Management System (QMS) to ensure the highest quality deliverables through a managed process approach that drives continual improvement. A Quality Management Plan (QMP) shall be provided as part of the Sustainment Plan referenced in section 8.0 (Program Management).

- (U) The contractor shall implement tools, techniques and methods to ensure the highest quality of each application release (e.g., software reviews, unit testing, component testing, etc.).
- (U) The contractor shall implement tools, techniques, processes and methods to ensure the highest quality data release (e.g., quality assurance, etc.).
- (U) The contractor shall implement tools, techniques, processes and methods to assist in identifying security vulnerabilities, both static and dynamic, in accordance with evolving government guidance.
- (U) The contractor shall implement and manage all aspects of a testing group, ensuring the highest quality of each data release and ensure requirements are being satisfied in accordance with NGA's acceptance procedure(s).
- (U) The contractor shall deliver a comprehensive Quality Assurance report for each application and/or dataset release.
- (U) The contractor shall maintain separate servers (onsite and offsite) to develop, test and maintain data and software code.
- (U) The contractor shall maintain an FTP fail-safe redundancy, offsite backup and a disk copy of AWS.
- (U) The contractor shall be AS9100D certified and maintain certification throughout the contract period of performance.
- (U) The contractor shall submit to possible audits directed by NGA Quality Assurance Team to ensure all tools, techniques, processes and methods are being implemented in a manner as to protect all applications and data from defects, security vulnerabilities, as well as providing NGA and its users an accurate, validated and consistent product for SoN.

## 7.0 (U) QUALITY ASSURANCE SURVEILLANCE PLAN (QASP) / ACCEPTANCE CRITERIA

(U) The purpose of the QASP is to describe the systematic methods used to monitor performance and to identify the required documentation and the resources to be employed. The QASP provides a means for evaluating whether the contractor is meeting the performance standards/quality levels identified in the SOW and the contractor's Quality Control Plan (QCP).

(U) The required performance standards and/or quality levels are included in the Performance Requirements Summary Table. If the contractor meets the required service or performance level, it will be paid the monthly amount agreed on in the contract. Failure to meet the requisite service or performance levels would result in a deduction.

**Performance Requirements Summary Table**

| Contract Requirement | Performance Objective | Acceptance Criteria | Method of Assessment |
|---|---|---|---|
| Applications<br>Aero App (Windows, Android and iOS.)<br>Aero Data Server Software | Delivery executable files of new version of each application and schedule to include source code. | 100% | Load application of appropriate platform and conduct visual & operational tests |
| Core Data | Delivery datasets on schedule to meet AIRAC cycle dates | 100% | Load and test data to ensure it displays as required on each application. |
| Map files | Delivery datasets on schedule to meet AIRAC cycle dates | 100% | Load and test data to ensure it displays as required on each application. |
| Aero App Website | Update an maintain website as directed by government | 90% | Review and ensure information is correct and data is accessible from site and accounts and maintained |
| Aero App data hosting on Amazon Web Services | Upload / test next cycle data and remove previous cycle data from cloud | 100% | Download and test data. |

## 8.0 (U) PROGRAM MANAGEMENT

(U) The contractor shall participate in the methodology for implementing specific requirements as they develop relative to the Technical Exchange Meetings (TEMs), Software Engineering Review Board (SERBs) meetings and Project Close-out and/or Final Acceptance Meeting (FAM). The business process must clearly articulate roles and responsibilities of all parties.

(U) At a minimum, the following must be completed by the Contractor Program Manager:

- (U) Schedule and lead a Project Kick-off and Close-out meeting with Contractor and Sponsor stakeholders. The Project Close-out meeting will review accomplishments, challenges and next steps for the overall effort.
- (U) Create, monitor and report progress against a project schedule while maintaining a log of project risks and issues for elevation and resolution. The Sponsor can review this log at any time during the execution of this effort.
- (U) The contractor shall coordinate and participate in informal ad hoc TEMs between the government and contractor. These TEMs shall be conducted via VTC or at contractor site.
- (U) The contractor shall participate in Software Engineering Review Board (SERB) meetings as necessary, conducted via telecom, at NGA facilities or at the contractor's site.
- (U) The contractor shall coordinate and participate in FAMs to discuss the pending software release (FAM method is to be submitted as part of the Sustainment Plan).
- (U) Prior to final software release, the contractor shall provide a plan to address any issues, identified by NGA prior to and, following the FAMs.
- (U) The contractor shall provide a delivery mechanism (e.g. File Transfer Protocol (FTP) site, email and DVDs) as part of the Sustainment Plan to be agreed upon after contract award.

## 9.0 (U) DELIVERABLES

(U) Contractor omissions and /or errors causing the need for replacement deliverables and cost increases shall be absorbed by the contractor. DVDs will be rejected by the Government based on any safety of flight issues; including, but not limited to missing countries, missing products, incorrect effective dates, wrong coordinates, etc. All deliverables generated by the contractor during performance of the contract are the property of NGA. The contractor will submit all documentation to the Contracting Officer Representative (COR) (or designee) at the conclusion of the effort.

(U) Contractor omissions and /or errors causing the need for replacement deliverables and cost increases shall be absorbed by the contractor. DVDs will be rejected by the Government for any safety of flight issues; including, but not limited to missing countries, missing products, incorrect effective dates and/or wrong coordinates, etc.

- **(U) APPLICATION DELIVERABLES**

(U) The contractor shall provide Application deliverables in an Open Geospatial Consortium (OGC) compliant format to support NGA websites, Application Store, external websites, Amazon Cloud (AWS) and efforts; as well as process and deliver the final DVDs for media replication:

- (U) The contractor shall provide the application files(s), executable for each application release as needed, but not to exceed quarterly.

- (U) The contractor shall provide the fully commented source code and QC testing results for each application release.
- (U) The contractor shall provide a comprehensive application user guide for each application release and operating system (e.g. guide to use, load and initialize the application).
- (U) The final DVDs shall include the current application executable(s).
- (U) The final DVDs shall include the current application user guide(s) and Read Me files.
- (U) The contractor shall manage all versioning hierarchy for each application release per operating system.
- (U) The contractor shall provide versioning documentation for each application release per operating system (e.g. highlights, system requirements, version history, etc.).

- **(U) DATASET DELIVERABLES**

(U) The contractor shall provide dataset deliverables in an Open Geospatial Consortium (OGC) compliant format to NGA websites, external websites, Amazon Cloud (AWS). The contractors shall comply with the 28-day Aeronautical Information Regulation and Control Cycle (AIRAC), as it relates to processing and delivering the final DVDs for media replication, web hosting and AWS. Contractor shall process commercial aeronautical procedures every 14 days as it relates to the NGA worldwide library data requirements.

(U) The final DVDs shall include:

- The dataset associated with the current cycle (e.g. Base data, Africa, Alaska, Canada, CONUS Part 1 & Part 2, CSA, EEA, ENAME, Global, PAA and FAA, etc.)
- The current application(s) executable
- The current application(s) User Guides and Read Me files
- The Final non DVD data deliverables, shall include but not limited to –
  - World Wide Library
    - Host Source
    - Translated Source
    - DOD Electronic Instrument Procedure Library (E-IPL)
    - AMC Giant Reports
    - Other Contractor Source
    - Other Commercial Procedures

(U) The contractor shall combine the NGA data provided, with data and procedures from other providers (i.e., FAA, Canada, other commercial providers, foreign government partners, etc.)

through an agreed to mechanism for final DVDs media replication, NGA web hosting, external web hosting and AWS and the Aeronautical Application. The contractor shall provide NGA with two complete sets of the final approved DVDs.

(U) The contractor shall provide the final DVD Imaging in a DDP Format. The DVDs will be delivered to the replication vendor via the following; (two) overnight package delivery methods (Federal Express and United Postal Service) and FTP site. The DVDs may be rejected by the replication vendor if the final disc(s) are damaged in any way that may result in data loss.

(U) The DVDs shall be DVD+R DL and DVD-R SL (both not RW) readable by 32 bit XP workstations.

(U) Final DVDs shall be made available for NGA to review no later than (NLT) 1200 Central Standard Time (CST), or Central Daylight Time (CDT), when applicable, on the Tuesday after cutoff for final product acceptance and Quality Assurance report review.

(U) Once final DVDs are approved by NGA, the contractor shall deliver the final DVDs to the vendor NLT 1300 CST or CDT when applicable on the Wednesday after cutoff for replication and distribution.

(U) Once final DVDs are approved by NGA, the data package DVDs for NGA websites shall be delivered NLT 1300 CST or CDT, when applicable, on the Wednesday after cutoff for product assurance and quality control checks. The delivery mechanism is to be agreed upon after contract award.

(U) All deliverables shall be sent to:

**National Geospatial-Intelligence Agency**
**Attn: Aeronautical Navigation Office**
**Aeronautical Mobile Application Program Officer**
**Mailstop: L-27**
**3838 Vogel Road**
**Arnold, MO 63010-6238**

## 10.0 (U) REPORTS AND MEETINGS

(U) Communication between NGA and the contractor is essential to achieving success in meeting our mission, conducting business, and advancing our abilities to provide the AMA to our customers. To achieve this success, the following requirements are included in this SOW:

- (U) Status Reports:

(U) Monthly AMA Program Status Reports, delivered to the Sponsor electronically, by the end of each month to include but not limited to:

Summary of Schedule, Budget and Deliverables

Top Issues & Risks

Key achievements

Accomplishments for This Reporting Cycle

Project challenges

Planned accomplishments, issues and tentative schedule for the following month for expected task completion

Customer Engagement

Conclusion

(U) The contractor will deliver a final report to the Sponsor no later than 30 days after the conclusion of the period of performance. The final report will document the overall contractor effort and the performance of the contractor's solution.

- (U) Technical Exchange Meetings (TEMs):

(U) Conduct four annual TEMs where the contractor will participate face to face with NGA. The contractor is expected to either travel to NGA West (Section 15.0) or NGA representatives will travel to the contractor's location four times a year. The contractor shall provide all meeting minutes and action items within 72 hours of all TEMs.

- (U) Documentation

(U) Read-Me files and User Manuals will be posted on NGA delivery sites with each software release and update.

- (U) Verbal Communications:

Immediate verbal updates are required to NGA AMA Program Manager regarding the following:

Changes to data or application

Bugs with application

Data errors

Issues with data or application software delivery schedule

Issues with servers or delivery methods

Quality Assurance issues (QA)

All Safety of Navigation issues (SON)

**11.0 (U)SECURITY**

(U) All NGA Aeronautical data for use with this effort is UNCLASSIFIED. The contractor resources provided for maintenance and data delivery are not required to hold security clearances given that the nature of the data will be Unclassified. A classified environment is not required at the contractor facility and an Automated Information System (AIS) is not required for this effort.

(U) For access to NGA facilities during maintenance and data delivery, contractor personnel must be escorted.

(U) The contractor shall follow all applicable NGA, IC, and DoD information security and operational security policies and guidance when accessing and transmitting data over networks during performance of contractual requirements.

**12.0 (U) GOVERNMENT FURNISHED INFORMATION (GFI)**

(U) GFI shall be provided to the contractor for use during performance of this contract. NGA will provide the DoD Aeronautical Application, dataset, NGA Aeronautical data and other identified NGA production and pre-production data and products as GFI through an agreed to mechanism (e.g. contractor supported FTP site, DVD/CD or other identified secure means). This AMA GFI remains property of NGA and is to be utilized solely for the execution of requirements within this contract. The contractor is responsible for maintaining accountability and control of this information and also providing safeguards for any FOUO, Limited Distribution or Classified information. Any information that is not described in this Statement of Work but is determined to be required for performance of tasks within this SOW shall be requested in writing.

(U) All information will be marked with a Government Purpose Rights legend as defined in Defense Acquisition Regulations Supplement (DFARS) 252.227-7025(b)(2). This legend must be carried through any processing, data conversion or formatting done to the final display of the information in the Application.

(U) All deliverables generated by the contractor during the performance of this contract are the property of the Government. At the conclusion of this effort, the contractor shall submit all associated documentation to the Contract Officer Representative (COR) (or designee).

**13.0 (U) DATA RIGHTS**

(U) All technical data computer software required to be developed and delivered under this contract (including technical data computer software delivered or ordered under DFARS 252.227-7026 and 252.227-7027) will be delivered to the Government with no less than Government Purpose Rights as defined in DFARS 252.227-7013 and 252.227-7014 (this includes any third party copyrighted

technical data, computer software or software documentation that is incorporated into the technical data, software or documentation to be delivered), unless otherwise agreed to in writing by the Contracting Officer specifically mentioning this provision. However, if the Government is entitled to greater rights pursuant to DFARS 252.227-7013 and 252.227-7014, the technical data or computer software will be delivered with greater rights. Specifically, the government requires the delivery of the code written to perform the functions required in this SOW with no less than Government Purpose Rights.

(U) The data for this project will be UNCLASSIFIED with appropriate handling caveats and CLASSIFIED with appropriate handling caveats. The data for the NGANet / JWICS instance may include information up to the classification level of the system. Personnel using this source material shall be notified by the Government of the sensitivity.

**14.0 (U) TRAVEL**

(U) NGA will require at least bi-annual travel to the NGA West location (e.g. kickoff and/or Program Management Review meetings). Travel should include two contractor representatives for three nights and two days. All lodging, per diems, airfare and rental cars shall be calculated at the current government locality (St. Louis) rate. Meetings will be established ad-hoc and coordinated with the contractor though the Contracting Officer Representative (COR).

(U) All other travel shall be approved by the COR before being scheduled and conducted. When appropriate, Video Teleconferencing (VTC) Systems shall be utilized. Discretionary travel may be required by the contractor at the request of NGA for informational meetings concerning AMA system configuration, software integration and/or training. During option periods, onsite integration support and training will be conducted at NCW, discretionary travel my be utilized upon approval by the COR.

(U) Technical Exchange Meetings (TEM) will be held quarterly at the contractor facility to foster strategic planning and evaluate the software and dataset development to ensure the program meets the requirements derived by the services. NGA program representatives will provide contractor with program status updates that impact / influence the program.

**15.0 (U) TRANSITION PLAN**

(U) The Safety of Navigation mission mandates that the services described in this SOW be maintained according to the schedules presented. A Transition Plan is required to demonstrate the organization, personnel, workspace, hardware, software and processes necessary to successfully execute the government's requirements as outlined in this SOW. A seamless transition between the current contractor and the incoming contractor is essential to ensure the timely delivery of aeronautical data, products and applications without interruptions or negative mission impact. Transition period requirements include the following:

- Within 7 days after contract award, the contractor shall receive all the government owned documentation required for the processing of Aeronautical data, for use in the Aeronautical Application.

- Within 30 days after contract award, the contractor shall have the infrastructure in place to process, manipulate and quality check the data and files. As well as upload data and files to applicable sites for hosting and sending for final DVD replication and distribution.
- After the infrastructure is in place NGA will provide the contractor with multiple test data-sets and production periods. The contractor will develop and document their process for delivery of the data and files and submit to NGA no later than 45 days after contract award. NGA will review the documented process and provide feedback and request changes as required, no later than 50 days after contract award.
- Within 60 days after contract award, the contractor shall provide NGA with "test" DVDs and Non DVD deliverables using the process developed in Section 14.3
- The Government will perform a thorough quality review of the "test" deliverables to insure that the deliverable(s) match the format, content and accuracy that is currently being produced for data cycles.
- If applicable, the contractor shall fix all identified issues and generate new "test" DVDs and Non DVD deliverables with the corrections implemented within 72 hours after notification.
- Three AIRAC cycles after award the contractor shall produce and deliver the Final DVDs for media replication and the Final data deliverables (e.g. Web hosting, DVDs, non DVD data deliverables) to be compared and quality checked against NGA's current cycle Final data deliverables and Final DVDs (See Appendix A – DVD Delivery Column).
- Following successful completion of the transition period, the incoming vendor will be solely responsible for all the cyclical production of the data deliverables for media replication and web hosting for the remaining period of performance.

# (U) APPENDIX A – DATASET DELIVERY SCHEDULE

*** Dates included in this appendix are for illustration purposes only to note the 28-day delivery times required for each cycle.** The actual task order delivery schedule will be updated at task order award once exact start date is determined. The delivery schedule will be based on a 28-day delivery cycle.

| CYCLE | EFFECTIVE DATE | JULIAN DATE | ADJUSTMENT (HOLIDAY) | NGA DATABASE CUTTOFF (2400 HRS.) | DIGITAL TEXT and CHART FILES COMPLETE (1200L) | DVD PRODUCTION | DVD DELIVERY (1200L) |
|---|---|---|---|---|---|---|---|
| **CALENDAR YEAR 2020** | | | | | | | |
| 2001 | 2-JAN-20 | 20002 | 0 | 10-Dec-19 | 16-Dec-19 | 17-Dec-19 | 18-Dec-19 |
| 2002 | 30-JAN-20 | 20030 | 0 | 7-Jan-20 | 13-Jan-20 | 14-Jan-20 | 15-Jan-20 |
| 2003 | 27-FEB-20 | 20058 | 0 | 4-Feb-20 | 10-Feb-20 | 11-Feb-20 | 12-Feb-20 |
| 2004 | 26-MAR-20 | 20086 | 0 | 3-Mar-20 | 9-Mar-20 | 10-Mar-20 | 11-Mar-20 |
| 2005 | 23-APR-20 | 20114 | 0 | 31-Mar-20 | 6-Apr-20 | 7-Apr-20 | 8-Apr-20 |
| 2006 | 21-MAY-20 | 20142 | 0 | 28-Apr-20 | 4-May-20 | 5-May-20 | 6-May-20 |
| 2007 | 18-JUN-20 | 20170 | 0 | 26-May-20 | 1-Jun-20 | 2-Jun-20 | 3-Jun-20 |
| 2008 | 16-JUL-20 | 20198 | 0 | 23-Jun-20 | 29-Jun-20 | 30-Jun-20 | 1-Jul-20 |
| 2009 | 13-AUG-20 | 20226 | 0 | 21-Jul-20 | 27-Jul-20 | 28-Jul-20 | 29-Jul-20 |
| 2010 | 10-SEP-20 | 20254 | 0 | 18-Aug-20 | 24-Aug-20 | 25-Aug-20 | 26-Aug-20 |
| 2011 | 08-OCT-20 | 20282 | 0 | 15-Sep-20 | 21-Sep-20 | 22-Sep-20 | 23-Sep-20 |
| 2012 | 05-NOV-20 | 20310 | 0 | 13-Oct-20 | 19-Oct-20 | 20-Oct-20 | 21-Oct-20 |
| 2013 | 03-DEC-20 | 20338 | -1 | 10-Nov-20 | 16-Nov-20 | 17-Nov-20 | 18-Nov-20 |
| 2014 | 31-DEC-20 | 20170 | 0 | 8-Dec-20 | 14-Dec-20 | 15-Dec-20 | 16-Dec-20 |
| **CALENDAR YEAR 2021** | | | | | | | |
| 2101 | 28-Jan-21 | 21028 | 0 | 5-Jan-21 | 11-Jan-21 | 12-Jan-21 | 13-Jan-21 |
| 2102 | 25-Feb-21 | 21056 | 0 | 2-Feb-21 | 8-Feb-21 | 9-Feb-21 | 10-Feb-21 |
| 2103 | 25-Mar-21 | 21084 | 0 | 2-Mar-21 | 8-Mar-21 | 9-Mar-21 | 10-Mar-21 |
| 2104 | 22-Apr-21 | 21112 | 0 | 30-Mar-21 | 5-Apr-21 | 6-Apr-21 | 7-Apr-21 |
| 2105 | 20-May-21 | 21140 | 0 | 27-Apr-21 | 3-May-21 | 4-May-21 | 5-May-21 |
| 2106 | 17-Jun-21 | 21168 | 0 | 25-May-21 | 31-May-21 | 1-Jun-21 | 2-Jun-21 |
| 2107 | 15-Jul-21 | 21196 | -1 | 22-Jun-21 | 28-Jun-21 | 29-Jun-21 | 30-Jun-21 |
| 2108 | 12-Aug-21 | 21224 | 0 | 20-Jul-21 | 26-Jul-21 | 27-Jul-21 | 28-Jul-21 |
| 2109 | 9-Sep-21 | 21252 | 0 | 17-Aug-21 | 23-Aug-21 | 24-Aug-21 | 25-Aug-21 |
| 2110 | 7-Oct-21 | 21280 | 0 | 14-Sep-21 | 20-Sep-21 | 21-Sep-21 | 22-Sep-21 |
| 2111 | 4-Nov-21 | 21308 | 0 | 12-Oct-21 | 18-Oct-21 | 19-Oct-21 | 20-Oct-21 |
| 2112 | 2-Dec-21 | 21336 | -1 | 9-Nov-21 | 15-Nov-21 | 16-Nov-21 | 17-Nov-21 |
| 2113 | 30-Dec-21 | 21364 | 0 | 7-Dec-21 | 13-Dec-21 | 14-Dec-21 | 15-Dec-21 |

# (U) APPENDIX B – REFERENCE DOCUMENTS

The following is a list of reference documents pertaining to the Aeronautical Application maintenance, and enhancement:

1. National System for Geospatial Intelligence Metadata Foundation (NMF) – Part 1: Core (https://nsgreg.nga.mil/doc/view?i=2142&end_month=4&end_day=25&end_year=2013)

2. AC 00-62 – Internet Communications of Aviation Weather and NOTAMS (http://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentID/22498)

3. AC 20-115B – Radio Technical Commission for Aeronautic, Inc. Document RTCA/DO-178B (http://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentID/22122)

4. AC 20-159 – Obtaining Design and Production Approval of Airport Moving Map Display Applications Intended for Electronic Flight Bag Systems (http://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentID/22298)

5. AC 120-76C – Guidelines for the Certification, Airworthiness, and Operational Use of Electronic Flight Bags http://www.faa.gov/documentlibrary/media/advisory_circular/ac_120-76c.pdfHuman Factors Considerations in the Design and Evaluation of Electronic Flight Bags (EFBs) : Version 2 http://ntl.bts.gov/lib/34000/34200/DOTVNTSC-FAA-03-07.pdf

6. Electronic Map Display Equipment for Graphical Depiction of Aircraft Position (http://www.airweb.faa.gov/Regulatory_and_Guidance_Library/rgTSO.nsf/0/c249ffa917524f6486256dc1006bc220/$FILE/TSO-C165.pdf)

7. AC 91-78 – Use of Class 1 or Class 2 Electronic Flight Bag (EFB) (http://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentID/73540)

8. A Tool Kit for Evaluating Electronic Flight Bags. Report Nos. DOT/FAA/AR-06/44. DOT-VNTSC-FAA-06-21 (http://ntl.bts.gov/lib/34000/34200/34294/DOT-VNTSC-FAA-06-21.pdf)

9. Open Geospatial Consortium standards (http://www.opengeospatial.org/standards/is)

10. IEEE 12207-2008: (https://standards.ieee.org/findstds/standard/12207-2008.html)

# (U) APPENDIX C – LABOR CATEGORIES DESCRIPTION FOR EMERGING REQUIREMENTS

1. **Program Manager:** Performs day-to-day management of overall contract support operations, possibly involving multiple projects and groups of personnel at multiple locations. Organizes, directs and coordinates planning and production of all contract support activities. Demonstrates written and oral communication skills. Must be capable of leading projects that involve the successful management of teams composed of engineers, computer programmers, web/application/software developers and management professionals who have been involved in analyzing, designing, developing, integrating, training, testing, documenting, implementing and maintaining complex systems.

    a. **Experience:** At least 10 years of IT/Software/Application management experience.
    b. **Education:** Bachelor's Degree in Computer Science or related field.

2. **Project Manager:** Performs day-to-day management of assigned task order projects that involve teams composed of engineers, computer programmers, web/application/software developers and management professionals who have been involved in analyzing, designing, developing, integrating, training, testing, documenting, implementing and maintaining complex systems. Demonstrates proven skills in those technical areas addressed by the task order to be managed. Organizes, directs and coordinates planning and production of all activities associated with assigned task order projects. Demonstrates written and oral communication skills.

    a. **Experience:** At least 8 years of IT/Software/Application management experience.
    b. **Education:** Bachelor's Degree in Computer Science or related field.

3. **Lead Engineer:** Responsible for the overall software program architecture, as well as for overseeing the work being accomplished by the Software Engineers working on the program. The Lead Engineer will serve as an interface between the programmers and management and have a supervisory role in delegating work and ensuring all work is accomplished within the agreed to parameters. Lead Programmers will also serve as technical advisors to management and provide programming perspective on requirements.

    a. **Experience:** Minimum of 10 years in the field and a Bachelor's degree in Computer Science or related field.

4. **Senior Engineer:** Assists Software Engineers by guiding their day to day activities and providing technical expertise. Analyzes and tests software or systems to identify errors and ensure conformance to specifications/requirements. Modifies programming code while assisting the Software Engineer and corrects/prevents code problems.

    a. **Experience:** Minimum of 4 years in the field and a Bachelor's degree in Computer Science or related field.

5. **Engineer:** Formulates, modifies, and designs software code to meet the requirements as directed by the Senior Engineer. Tasks include software system testing procedures, programming, and documentation. Coordinates installations of software systems and monitors performance to ensure compliance with specifications.

    a. Experience: Minimum of 1 year in the field and a Bachelor's degree in Computer Science or related field.

**6. Quality Assurance Specialist:** Must be capable of evaluating software, applications and associated documentation. Participates in formal and informal reviews to determine information technology quality and in the development of software and application quality assurance plans. Examines and evaluates the quality assurance process and recommends enhancements and modification. Develops information technology quality standards.

**a. Experience:** Must have 4 years of experience working with IT quality control methods and tools with at least 2 years of experience in software/application testing and integration.

**7. Quality Assurance Tester:** Applies business and functional knowledge including testing standards, guidelines, and methodology to meet the programs requirements. Ensure all testing results are easily understandable, accessible, and tracked to closure. Maintains an up to date defect repository and provides expertise in the planning, constructing, and execution of test scripts.

**a. Experience:** Minimum of 4 years in the field and a Bachelor's degree in Computer Science or related field.

**8. Graphics Artist:** Create visual concepts through the use of software tools to communicate ideas and inform the software user. Create recognizable graphics by selecting color, images, icons that represent a particular idea or identity to be used in designing web and mobile interfaces.

**a. Experience:** A minimum of 3 years of experience in this area.
**b. Education:** Associate's Degree in related field.

**9. Technical Writer/Editor:** Assists in collecting and organizing information for preparation of user manuals, training materials, installation guides, proposals and reports. Edits functional descriptions, system specifications, user manuals, special reports and any other customer deliverables and documents. Assists in performing financial and administrative functions. Must demonstrate the ability to work independently or under only general direction.

**a. Experience:** A minimum of 3 years of experience in this area.
**b. Education:** Associate's Degree in related field.