

**BY ORDER OF THE
SECRETARY OF THE AIR FORCE**

AIR FORCE INSTRUCTION 63-137

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Acquisition

**ASSURANCE OF COMMUNICATIONS,
NAVIGATION, SURVEILLANCE/AIR
TRAFFIC MANAGEMENT (CNS/ATM),
NAVIGATION SAFETY, AND NEXT
GENERATION AIR TRANSPORTATION
SYSTEM (NEXTGEN) PERFORMANCE**

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This Air Force Instruction (AFI) implements Air Force Policy Directive (AFPD) 63-1, *Integrated Life Cycle Management*. This Instruction applies to all organizations that manage Air Force (AF) manned aircraft and remotely piloted aircraft (RPA), including the Air National Guard (ANG) and Air Force Reserve Command (AFRC). It defines AF processes required to establish and preserve Communications, Navigation, Surveillance/Air Traffic Management (CNS/ATM), Navigation Safety, and Next Generation Air Transportation System (NextGen) performance. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with AFMAN 33-363, *Management of Records*, and disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located at <https://www.my.af.mil/afirms/afirms/afirms/rims.cfm>. Cite all applicable report control numbers in accordance with AFI 33-324, *The Information Collections and Reports Management Program Controlling Internal, Public, and Interagency Air Force Information Collections*. Refer recommended changes and questions about this publication to SAF/AQQ using the AF Form 847, *Recommendation for Change of Publication*; route AF Form 847s from the field through the appropriate functional chain of command. This AFI may be supplemented at any level, but all supplements must be routed to SAF/AQQ for review and receive coordination prior to certification and approval.

SUMMARY OF CHANGES

This publication substantially revises AFI 63-1301 and must be completely reviewed. The Instruction clarifies and updates roles, responsibilities, and processes regarding the acquisition, modification and integration of CNS/ATM, Navigation Safety, and NextGen capabilities. It reflects incorporation of AFPD 63-13 into AFPD 63-1 and supersedes AFI 63-1301.

1. INTRODUCTION

1.1. **Purpose.** The purpose of this Instruction is to ensure United States Air Force aircraft continue to safely operate in worldwide airspace. The procedures in this Instruction are designed to coordinate AF efforts to ensure acquisitions, integrations, and modifications fully address CNS/ATM capability standards. This Instruction defines the roles, responsibilities, processes and procedures associated with assurance of CNS/ATM, navigation safety, and NextGen performance; to include those of the CNS/ATM Center of Excellence (COE) located at ESC/HBA, Aerospace Management Systems Division, Hanscom AFB, MA. Throughout this AFI the term “COE” refers to the CNS/ATM COE.

1.2. **Background.** The 1944 Chicago Convention of the International Civil Aviation Organization (ICAO) reaffirms nations’ exclusive sovereignty over airspace above their territory and the nation’s authority to dictate terms of access. AF policy emphasizes conformance to national and international standards for safe access to global airspace. Conformance with CNS/ATM capability standards is not to be interpreted as ceding jurisdiction or regulatory authority to civil or foreign regulators. Aircraft not meeting CNS/ATM capability standards may be subjected to ground delays waiting for clearance, directed to operate on less optimum routes, or denied airspace access.

1.3. **Intent.** The intent of this Instruction is to address the roles, responsibilities, and processes regarding all acquisition, integration, and modification of CNS/ATM, Navigation Safety, and NextGen capabilities. This Instruction is applicable to commercial derivative aircraft (CDA) when CNS/ATM acquisition, integration, and modification require AF operational approval. This Instruction does not provide authority to deviate from the guidance in AFPD 62-6, *USAF Air Worthiness* or AFI 62-601, *USAF Airworthiness*. **Note:** Airworthiness determinations for all USAF platforms are the responsibility of the Technical Airworthiness Authority (TAA).

1.4. **Navigation Safety.** This Instruction supports the AF objective to enhance navigation and safety capabilities. Navigation safety describes a family of technologies that promote aviation safety, increase aircrew situational awareness, increase survivability, improve navigational performance, or gather information needed to evaluate an incident. The term “CNS/ATM,” as used in this Instruction, includes navigation safety equipment for AF aircraft.

1.5. **Next Generation Air Transportation System (NextGen).** This Instruction also supports the United States NextGen initiative to increase safety and efficiency of operations in the National Airspace System (NAS) and similar efforts as they evolve around the globe. The DOD has a vested interest in ensuring and enhancing its ability to operate seamlessly with civil aviation in both national and international airspace. IAW the Deputy Secretary of Defense (DEPSECDEF) Memorandum, *Implementation of Next Generation Air Transportation System within the Department of Defense (NextGen)*, 28 Dec 2007

(<https://www.my.af.mil/gcss-af/USAF/content/nextgen>), the AF is the Department of Defense (DOD) Lead Service for NextGen and shall facilitate NextGen efforts across the DOD. This Instruction addresses the AF aircraft equipage portion of the much larger and broader national NextGen national effort. The term “CNS/ATM,” as used in this Instruction, includes AF aircraft equipage efforts associated with NextGen.

2. ROLES AND RESPONSIBILITIES. **Note:** Many of the topics in this section are further described in paragraph 3, *Processes and Procedures*; and in Attachment 1, *Terms*.

2.1. Assistant Secretary of the Air Force for Acquisition (SAF/AQ) shall:

2.1.1. Establish guidance for acquisition of CNS/ATM capabilities.

2.1.2. Monitor and review programs to ensure aircraft acquisition, integration, and modification activities adhere to appropriate CNS/ATM policies, guidance, and supplements.

2.1.3. Resolve disputes regarding CNS/ATM issues requested by a Program Executive Officer (PEO).

2.2. Capability Directors, Assistant Secretary of the Air Force for Acquisition (SAF/AQI, SAF/AQP, SAF/AQQ) shall support and advocate implementation of CNS/ATM acquisition, integration, and modification programs for aircraft and systems to ensure greatest possible access to airspace consistent with mission requirements.

2.3. Director, Global Reach Programs, Assistant Secretary of the Air Force for Acquisition (SAF/AQQ) shall act as SAF/AQ focal point for CNS/ATM and navigation safety.

2.4. Deputy Assistant Secretary of the Air Force (Science, Technology and Engineering) for Acquisition (SAF/AQR) shall:

2.4.1. Act as SAF/AQ engineering guidance lead to ensure effective integration of CNS/ATM requirements into related systems engineering instructions.

2.4.2. Act as SAF/AQ science and technology guidance lead to ensure effective integration of CNS/ATM requirements into related science and technology instructions.

2.5. Deputy Assistant Secretary of the Air Force (Acquisition Integration) for Acquisition (SAF/AQX) shall act as the SAF/AQ integrated life cycle management (ILCM) guidance lead to ensure effective integration of CNS/ATM requirements into related ILCM instructions.

2.6. Deputy Chief of Staff, Air Force Operations, Plans and Requirements (AF/A3/5) shall:

2.6.1. Ensure CNS/ATM requirements are identified and support prioritization to execute the AF’s global mission.

2.6.2. Assist COE, MAJCOMs and Program Managers (PMs) with interpretation of CNS/ATM capability standards and identifying associated aircrew, air traffic controller, and airfield manager training requirements.

2.6.3. Appoint subject matter experts to represent DOD at national and international CNS/ATM policy, rulemaking, and standards development forums.

2.6.4. Charter a cross-functional AF CNS/ATM Working Group to document overarching CNS/ATM requirements and assist MAJCOMs in acquiring common CNS/ATM capabilities. Open attendance to other services or organizations as appropriate.

2.6.5. Notify the FAA, ICAO, and appropriate nation(s) upon receipt of a Major Command (MAJCOM) CNS/ATM operational approval.

2.6.6. Obtain exceptions to CNS/ATM capability standards upon MAJCOM request.

2.6.7. Act as AF office of primary responsibility (OPR) in fulfilling duties as the DOD Lead Service for NextGen IAW the DEPSECDEF Memorandum, *Implementation of Next Generation Air Transportation System within the Department of Defense (NextGen)*, 28 Dec 2007 (<https://www.my.af.mil/gcss-af/USAF/content/nextgen>).

2.6.7.1. Advise DOD components on design, development, and implementation of future CNS/ATM services and systems.

2.6.7.2. Ensure the NextGen vision for the NAS meets DOD requirements, and that DOD resources are appropriately focused and managed.

2.6.7.2.1. Coordinate with each Service to develop, document, and seek validation of DOD NextGen program requirements.

2.6.7.2.2. Establish and provide administrative support for a DOD Joint Program Office (JPO) for NextGen. The JPO will coordinate DOD activities related to the NextGen effort, facilitate technology transfer for those research and development activities with potential NextGen application, and advocate for DOD interests, requirements, and capabilities in NextGen.

2.7. Air Force Flight Standards Agency (AFFSA) shall:

2.7.1. Evaluate and standardize AF aircraft operational policies and procedures to ensure compatibility with CNS/ATM performance requirements.

2.7.2. Serve as AF representative to the National Geospatial-Intelligence Agency (NGA) Safety of Navigation Executive Steering Group.

2.7.3. Assist COE, MAJCOMs, and PMs with application of CNS/ATM capability standards to operational and associated training requirements.

2.7.4. Coordinate on MAJCOM operational approvals.

2.7.5. Serve as AF focal point for CNS/ATM performance monitoring efforts, such as reduced vertical separation minimum (RVSM) recurrent monitoring, automatic dependent surveillance-broadcast (ADS-B) monitoring, and Mode S monitoring.

2.7.6. Participate in the Digital Working Group, AF CNS/ATM Working Group, and other CNS/ATM forums.

2.8. Air Force Materiel Command (AFMC) Commander (AFMC/CC) shall maintain and budget for the CNS/ATM Center of Excellence.

2.9. Major Commands (MAJCOMs) shall:

2.9.1. Develop, document, and fund CNS/ATM operational requirements.

2.9.2. Notify the appropriate PM of any issue impacting CNS/ATM capability immediately upon discovery.

2.9.3. Request the PM accomplish a CNS/ATM performance assessment (PA) when required.

2.9.4. Grant aircraft CNS/ATM operational approval IAW AFI 11-202V3, *General Flight Rules*, after verification that aircraft conform with host nation CNS/ATM capability standards. Exceptions, restrictions, or use of equivalent safety and performance requirements will be documented in the operational approval.

2.9.5. Notify AF Director of Operations (AF/A3O) and appropriate PM when an aircraft CNS/ATM operational approval is signed by the MAJCOM Director of Operations (A3) and provide a copy of the signed operational approval to AF/A3O, AFFSA, COE, and the appropriate PM.

2.9.6. Update weapon system concepts of operations (CONOPS), concept of employment (CONEMP), and maintenance concepts when required. Provide updated documents to the weapon system's PM.

2.9.7. Develop CNS/ATM operational and maintenance training.

2.9.8. Implement a process for reporting and resolving potential errors in both commercial and government furnished navigation data.

2.9.9. Participate in the Digital Working Group, AF CNS/ATM Working Group, and other CNS/ATM forums.

2.10. CNS/ATM Center of Excellence (COE) shall:

2.10.1. Actively participate in airspace standards forums.

2.10.2. Track and monitor CNS/ATM capability standards.

2.10.3. Generate generic performance matrices (GPMs) from applicable CNS/ATM capability standards.

2.10.3.1. Exercise technical authority and configuration control responsibilities for GPMs.

2.10.3.2. Publish a new/revised GPM within 90 calendar days of publication of a new or updated CNS/ATM capability standard.

2.10.3.2.1. Alert MAJCOMs, PMs and the TAA of a new and/or updated CNS/ATM capability standard within 30 calendar days of publication by a civil authority.

2.10.3.2.2. Alert MAJCOMs and PMs of a new and/or updated GPM within 30 calendar days of publication by the COE.

2.10.3.3. Ensure GPMs do not direct specific design solutions.

2.10.3.4. Ensure GPMs recommend verification methodologies.

2.10.4. Create and maintain technical support memorandum of understanding (MOU) and performance assessment report (PAR) templates. Provide current templates to PMs when required.

- 2.10.5. Establish a technical support MOU with every PM that requires COE support.
- 2.10.6. Support PMs in preparation of tailored performance matrices (TPMs), when required.
- 2.10.7. Provide an analysis of TPMs, prior to publication, for CNS/ATM performance requirements upon request of the PM.
- 2.10.8. Conduct PAs and generate PARs when required by the PM.
- 2.10.9. Review PARs and required artifacts submitted by an PM to determine if the PA validates performance requirements documented in the TPM.
- 2.10.10. Issue a letter of compliance (LOC) to the PM within 30 calendar days of PAR receipt, or as agreed to in the technical support MOU. The PM is the release authority for an LOC.
 - 2.10.10.1. Issue an LOC, within 30 calendar days, after PM notification of any CNS/ATM non-compliance.
 - 2.10.10.2. Issue an LOC, within 30 calendar days, after PM notification that the non-compliance has been resolved.
- 2.10.11. Be responsible for government furnished navigation data chain certification.
 - 2.10.11.1. Provide functional expertise and manpower to maintain the NGA Type 1 navigation data chain certification IAW appropriate standards.
 - 2.10.11.2. Perform periodic and event driven audits of NGA's navigation data processing for compliance with appropriate standards.
 - 2.10.11.3. Perform audits on organizations that establish processes to develop Terminal Instrument Procedures (TERPS) and grant these organizations a Type 1 Letter of Acceptance (LOA). Provide copies of Type 1 LOAs to AFFSA and MAJCOMs.
 - 2.10.11.4. Perform Type 2 navigation data chain certification audits as required and provide formal documentation of the certification in an LOA to the PM.
- 2.10.12. Develop and maintain contracts to supply CNS/ATM products for AF stakeholders (see paragraph 3.1.5. for details on the CNS/ATM equipment contract strategy). Ensure equipment on the contracts has approved frequency allocations for CNS/ATM transmitters/receivers IAW AFI 33-118, *Electromagnetic Spectrum Management*.
- 2.10.13. Maintain a website for dissemination of CNS/ATM and NextGen information, such as GPMs and Type 1 LOAs.
- 2.10.14. Participate in the Digital Working Group, AF CNS/ATM Working Group, and other CNS/ATM forums.
- 2.10.15. Facilitate recurring communication on CNS/ATM performance requirements, policies, and procedures among CNS/ATM stakeholders.
- 2.10.16. Resolve issues impacting implementation of CNS/ATM capability with PMs. Unresolved issues will be elevated to the PM's PEO and the PEO responsible for the

COE. Final adjudication authority for unresolved issues at the PEO level will be SAF/AQ.

2.11. Program Managers (PMs) shall:

2.11.1. Create and execute a technical support MOU with the COE and other support organizations to ensure CNS/ATM acquisitions, integrations, and modifications are properly supported. Prior to drafting an MOU or PAR, obtain the current template from the COE.

2.11.2. Ensure GPMs are tailored to define CNS/ATM performance requirements.

2.11.2.1. Exercise technical authority and configuration control responsibilities for TPMs.

2.11.2.2. Prepare TPMs in time to support major program contract activities (request for proposals, engineering change proposals, contract change proposals, etc.).

2.11.2.3. Ensure COE provides an analysis of the TPM, prior to publication, for CNS/ATM performance requirements.

2.11.2.4. Ensure the TAA provides an analysis of the TPM, prior to publication, for CNS/ATM airworthiness certification requirements

2.11.3. Ensure CNS/ATM activities are included in the acquisition strategy, integrated master plan (IMP), integrated master schedule (IMS), and other planning documents.

2.11.4. Ensure CNS/ATM acquisitions, integrations, and modifications meet the performance requirements published in the TPM.

2.11.5. Ensure PAs are accomplished when required by a MAJCOM.

2.11.6. Provide PA status to MAJCOM upon request.

2.11.7. Ensure a PAR is accomplished for every PA using the PAR template available from the COE.

2.11.8. Submit the PAR, required artifacts, and LOC request to the COE.

2.11.9. When required, provide the LOC to the MAJCOM and TAA as evidence of compliance with CNS/ATM performance requirements. An LOC, by itself, is insufficient to support issuance of an operational approval. The PM is the release authority for an LOC.

2.11.10. Notify MAJCOM, COE, and TAA of any issue impacting CNS/ATM capability immediately upon discovery.

2.11.11. Obtain CNS/ATM products through the COE-managed contracts and approved products list unless not financially advantageous or technically suitable. Decisions to deviate from this direction shall be documented in the acquisition strategy/life cycle management plan.

2.11.12. Analyze life cycle cost of commercial navigation data versus government furnished navigation data. IAW DODI 5000.56, *Programming Geospatial-Intelligence (GEOINT)*, *Geospatial Information and Services (GI&S)*, and *Geodesy Requirements for Developing Systems*, all acquisition programs shall make maximum use of standard

military data and digital databases provided by the NGA and the National System for Geospatial Intelligence (NSG). Document the analysis/decision in the acquisition strategy/life cycle management plan.

2.11.13. Ensure all CNS/ATM functions have approved frequency allocations for transmitters/ receivers IAW AFI 33-118, *Electromagnetic Spectrum Management*.

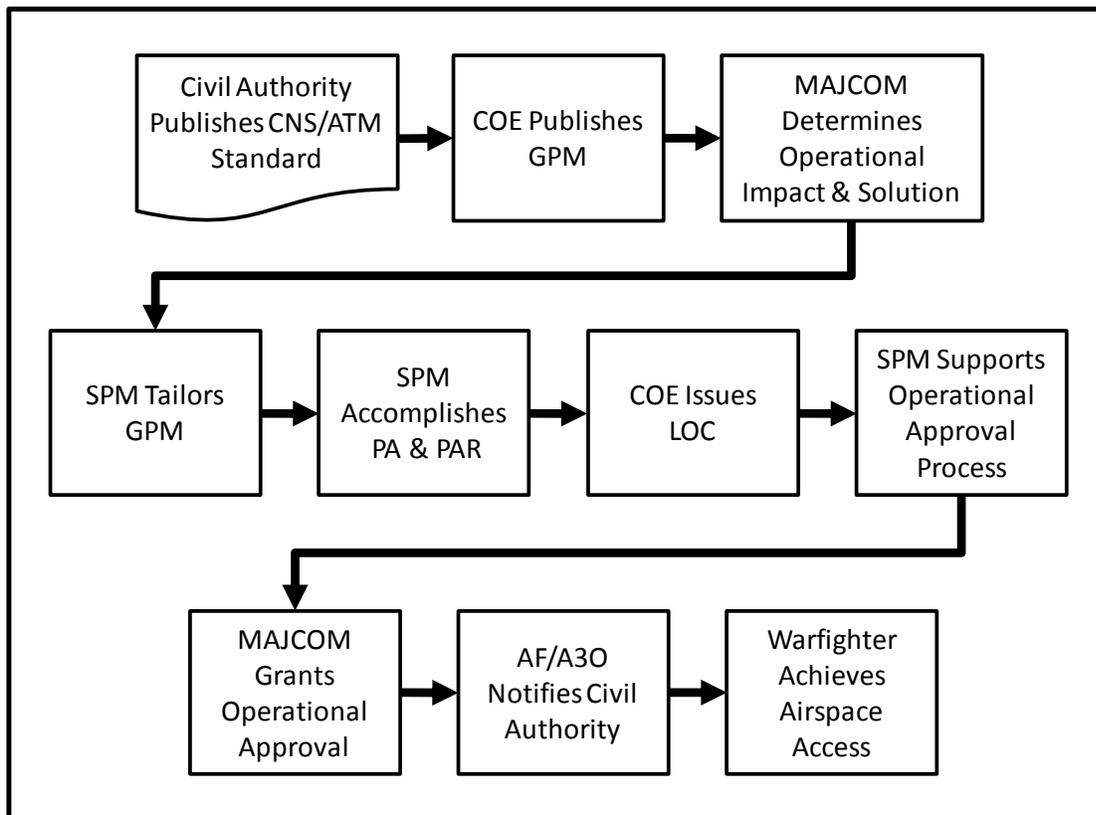
2.11.14. Resolve issues impacting implementation of CNS/ATM capability with the COE. Unresolved issues will be elevated to the PM's PEO and the PEO responsible for the COE. Final adjudication authority for unresolved issues at the PEO level will be SAF/AQ.

2.11.15. Participate in the Digital Working Group, AF CNS/ATM Working Group, and other CNS/ATM forums.

3. PROCESSES AND PROCEDURES

3.1. **Publication of a CNS/ATM Capability Standard to Distribution of Operational Approval.** This process starts with the publication or revision of a CNS/ATM capability standard and produces an operational approval resulting in airspace access for the aircraft (Figure 3.1). The PM determines when these processes and procedures apply to CDA maintaining FAA type certification.

3.1.1. CNS/ATM Capability Standards. CNS/ATM capability standards are created by national/international civil aviation authorities and recognized standards development organizations. All stakeholders who monitor CNS/ATM capability standards and/or interface with host nation civil aviation authorities, foreign defense ministries, and air navigation service providers report proposed, pending, or published changes, policy changes, or other CNS/ATM issues to AF/A3O and the COE upon discovery.

Figure 3.1. CNS/ATM Capability Standard to Operational Approval Process.

Note: This figure does not capture airworthiness certification processes. Reference AFI 62-601, *USAF Airworthiness*, 11 June 2010, for information regarding airworthiness processes.

3.1.2. Generic Performance Matrix (GPM). The COE monitors CNS/ATM capability standards and converts these standards into a set of generic performance requirements documented in a GPM. A GPM does not define performance requirements for specific aircraft. GPMs provide examples of verification methodologies successfully used by commercial developers to conform with CNS/ATM capability standards. A GPM, created and maintained by the COE, is prepared for each CNS/ATM capability. The GPM forms the basis for a TPM.

3.1.2.1. The COE alerts MAJCOMs and PMs of publication of a new or updated CNS/ATM capability standard.

3.1.2.2. The COE develops/modifies a GPM upon publication of a new or updated CNS/ATM capability standard. The COE notifies MAJCOMs and PMs when a new or revised GPM is published.

3.1.2.3. MAJCOMs determine, with PM support, how to address CNS/ATM capability standards for aircraft (materiel or non-materiel solution).

3.1.3. Technical Support Memorandum of Understanding (MOU). The MOU establishes a working relationship and timelines between the PM, the COE, and technical support organizations needed to ensure CNS/ATM acquisitions, integrations, and modifications are supported throughout a program's life cycle. Inclusion of the COE on all CNS/ATM

technical support MOUs provides early and appropriate expectation management of the services an PM will require of the COE, even if only to execute an LOC and Type 2 LOA. If required, a memorandum of agreement (MOA) may establish these relationships (see *Terms* section for MOU/MOA definition).

3.1.3.1. If the MAJCOM decision is to address a CNS/ATM capability with a materiel solution, the PM prepares and executes a technical support MOU using the template available from the COE.

3.1.3.2. It is recommended that the MOU be executed early in a CNS/ATM acquisition, integration or modification planning process.

3.1.4. Tailored Performance Matrix (TPM). The PM must tailor a GPM in order to define a set of performance requirements for a specific aircraft. Compliance with this set of performance requirements will ensure the aircraft conforms to CNS/ATM capability standards. TPMs identify specific supporting artifacts included in a PA and the criteria required to verify compliance of each performance requirement. Prior to TPM publication, PMs will request a COE analysis of the TPM for CNS/ATM performance requirement compatibility with CNS/ATM capability standards. Additionally, the PM will request a TAA analysis of the TPM for airworthiness certification requirements. The PM will provide feedback to the COE and TAA on the incorporation of this analysis prior to publishing the TPM.

3.1.5. CNS/ATM Equipment Contract Strategy. The COE currently maintains multiple indefinite delivery/indefinite quantity (ID/IQ) contracts for CNS/ATM hardware and software procurement. The ID/IQ contracts can be used by AF, DOD, and federal organizations to minimize life cycle expenses associated with aircraft specific solutions where a certified and widely used piece of equipment is available. Where possible, the COE negotiates extended warranty clauses not usually available through commercial means. Refer to the following website for more information regarding CNS/ATM hardware and software procurement from the “iGATM catalog”: <https://igatm.hanscom.af.mil/igatm/servlet/gatm.servlets.LoginServlet>.

3.1.5.1. The MAJCOM and PM use the iGATM catalog when analyzing procurement options.

3.1.5.2. The PM determines whether available products are financially advantageous or technically suitable. Guidance on the iGATM website provides detailed instructions on how to execute a procurement contract.

3.1.6. Performance Assessment (PA). A PA validates how each performance requirement within the TPM was addressed. PA results are documented in a PAR, and include CNS/ATM functionality added to an aircraft, and the degree to which the integrated systems perform with respect to applicable CNS/ATM performance requirements. The PM ensures a PA is accomplished when required by a MAJCOM. MAJCOMs may require a PA to verify compliance with documented TPM criteria in a new or modified aircraft configuration, or to determine CNS/ATM functionality provided by an existing aircraft configuration.

3.1.7. Performance Assessment Report (PAR). A PAR documents the outcomes/findings of a PA. The PM submits a PAR to the COE with required artifacts and an LOC request.

3.1.8. Letter of Compliance (LOC). An LOC documents compliance with CNS/ATM performance requirements.

3.1.8.1. In accordance with the MOU, the COE analyzes the PAR and issues an LOC that documents the compliance/non-compliance areas.

3.1.8.2. The PM provides an LOC to the MAJCOM and TAA when required.

3.1.9. Operational Approval. IAW AFI 11-202V3, a MAJCOM approves operational use of CNS/ATM and navigation safety systems.

3.1.9.1. The PM submits the PA, PAR, and LOC to support MAJCOM CNS/ATM operational approval.

3.1.9.2. Operational workarounds for issues impacting CNS/ATM capability should be coordinated with AFFSA prior to signing an operational approval.

3.1.9.3. The MAJCOM grants aircraft CNS/ATM operational approval after verification that the aircraft conforms to CNS/ATM capability standards. Exceptions, restrictions, or the use of equivalent safety and performance requirements are documented in the operational approval.

3.1.9.4. The MAJCOM forwards operational approval to AF/A3O who notifies the FAA, ICAO, and ICAO regional monitoring agencies of the AF's intent to operate the aircraft in the specified airspace.

3.1.9.5. The MAJCOM provides a copy of the signed operational approval to AF/A3O, AFFSA, the appropriate PM, and COE. AFFSA serves as the repository for AF operational approvals.

3.2. Discovery of an Issue Impacting CNS/ATM Capability. Paragraph 3.1 and Figure 1 describe the typical acquisition process regarding a new or modified CNS/ATM capability standard. This paragraph provides guidance for issues arising outside of the typical process that impact CNS/ATM capability.

3.2.1. CNS/ATM stakeholders notify the PM upon discovery of an issue impacting CNS/ATM capability.

3.2.2. The PM notifies the affected MAJCOMs, COE, and TAA upon discovery of an issue impacting CNS/ATM capability. Stakeholders communicate and collaborate to determine the impact of the CNS/ATM related issue and take actions to mitigate degraded CNS/ATM capabilities.

3.2.3. The COE amends or issues an LOC as required.

3.2.4. The PM provides the LOC to the MAJCOM and TAA, as required, to take appropriate actions.

3.3. Aeronautical Navigation Data Chain Certification.

3.3.1. Type 1 Data Chain Letter of Acceptance (LOA). The COE performs periodic and event driven audits of the production and distribution of digital aeronautical navigation data to meet current CNS/ATM capability standards. The Type 1 LOA covers the portion of the data chain from an originating nation-state source to the developed electronic database that is made available to users. There is no identified compatibility with any specific aircraft system in a Type 1 LOA.

3.3.2. Type 2 Data Chain Letter of Acceptance (LOA). When the CNS/ATM capability standard requires a navigation accuracy of Area Navigation/Required Navigation Performance (RNAV/RNP) of 4 nautical miles or tighter, the COE audits the responsible entity for converting and distributing the Type 1 LOA approved electronic database. The approved electronic database is converted to an aircraft-specific electronic database which is compatible with the aircraft system to ensure performance requirements are met and the CNS/ATM capability standard is satisfied.

3.3.3. Avionics/Weapons/Electronics (AWE) Conversion Tool Certification. As part of the Type 2 LOA, the COE certifies the MAJCOM-approved AWE database conversion tools used to convert the Type 1 LOA approved electronic database into an image that is compatible with the aircraft navigation system. These AWE tools must also conform to applicable CNS/ATM capability standards.

David M. Van Buren
Air Force Service Acquisition Executive

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

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Adopted Forms

AF Form 847, *Recommendation for Change of Publication*, 22 September 2009

Abbreviations and Acronyms

ACAT—Acquisition Category

ADS-B—Automatic Dependent Surveillance—Broadcast

AF—Air Force
AF/A3/5—USAF Operations, Plans, and Requirements
AF/A30—USAF Director of Operations
AFFSA—Air Force Flight Standards Agency
AFI—Air Force Instruction
AFMAN—Air Force Manual
AFMC—Air Force Materiel Command
AFPD—Air Force Policy Directive
AFRC—Air Force Reserve Command
AFRIMS—Air Force Records Information Management System
AFSPC—Air Force Space Command
ANG—Air National Guard
AWE—Avionics/Weapons/Electronics
C2 & CS—Command and Control, Communication Systems
CDA—Commercial Derivative Aircraft
CNS/ATM—Communications, Navigation, Surveillance/Air Traffic Management
COE—Center of Excellence
CONEMP—Concept of Employment
CONOPS—Concept of Operations
DEPSECDEF—Deputy Secretary of Defense
DOD—Department of Defense
ESC—Electronic Systems Center
ESC/HBA—Aerospace Management Systems Division
FAA—Federal Aviation Administration
GATM—Global Air Traffic Management
GPM—Generic Performance Matrix
IAW—In Accordance With
ICAO—International Civil Aviation Organization
ID/IQ—Indefinite Delivery/Indefinite Quantity
ILCM—Integrated Life Cycle Management
IMP—Integrated Master Plan
IMS—Integrated Master Schedule

JPO—Joint Program Office

LOC—Letter of Compliance

LOA—Letter of Acceptance

MAJCOM—Major Command

MOA—Memorandum of Agreement

MOU—Memorandum of Understanding

MPSSF—Mission Planning System Support Facility

NAS—National Airspace System

NextGen—Next Generation Air Transportation System

NGA—National Geospatial-Intelligence Agency

NSG—National System for Geospatial Intelligence

OPR—Office of Primary Responsibility

PA—Performance Assessment

PAR—Performance Assessment Report

PEO—Program Executive Officer

PM—Program Manager

RPA—Remotely Piloted Aircraft

RDS—Records Disposition Schedule

RNAV—Area Navigation

RNP—Required Navigation Performance

RTCA—Radio Technical Commission for Aeronautics

RVSM—Reduced Vertical Separation Minimum

SAE—Service Acquisition Executive

SAF/AQ—Assistant Secretary of the Air Force for Acquisition

SAF/AQI—Director, Information Dominance Programs, Assistant Secretary of the Air Force for Acquisition

SAF/AQP—Director, Global Power Programs, Assistant Secretary of the Air Force for Acquisition

SAF/AQQ—Director, Global Reach Programs, Assistant Secretary of the Air Force for Acquisition

SAF/AQR—Deputy Assistant Secretary of the Air Force (Science, Technology, and Engineering) for Acquisition

SAF/AQX—Deputy Assistant Secretary of the Air Force (Acquisition Integration) for Acquisition

TAA—Technical Airworthiness Authority

TERPS—Terminal Instrument Procedures

TPM—Tailored Performance Matrix

Terms

Acquisition—the conceptualization, initiation, design, development, test, contracting, production, deployment, and disposal of a directed and funded effort that provides a new, improved, or continued materiel, weapon, information system, logistics support, or service capability in response to an approved need.

Acquisition Program—a directed, funded effort that provides a new, improved, or continuing materiel, weapon or information system, or capability in response to an approved need.

Aeronautical Navigation Data Chain—the aeronautical data chain is a series of interrelated links where each link provides a function that facilitates the origination, transmission, and use of aeronautical data for a specific purpose. The path that aeronautical data takes is from its creation (source) to its end use (navigation solution).

Artifact—documentation provided by a PM verifying compliance of each line item of a tailored performance matrix.

CNS/ATM Capability Standards—standards adopted by national and/or international civil authorities or recognized standards development organizations specifying the CNS/ATM capabilities necessary to gain access and operate in national or international airspace.

Commercial Derivative Aircraft—civil aircraft procured or acquired by the military (reference FAA Order 8110.101).

Enterprise—the related activities performed for a common purpose including all activities, whether performed in one or more functional or organizational units.

iGATM—the COE-managed website with information regarding CNS/ATM hardware and software procurement. Also known as the “iGATM catalog.” Registration and guidance available at the following website: <https://igatm.hanscom.af.mil/igatm/servlet/gatm.servlets.LoginServlet>.

Generic Performance Matrix—the set of generic performance requirements derived from CNS/ATM capability standards for a given CNS/ATM capability. A GPM does not define performance requirements for specific aircraft. GPMs provide examples of verification methodologies successfully used by commercial developers to conform to CNS/ATM capability standards. The GPM forms the basis for a TPM.

Integrated Life Cycle Management—the seamless governance, transparency, and integration of all aspects of infrastructure, resource management, and business systems necessary for successful development, acquisition, fielding, and sustainment of systems, subsystems, end items, and services to satisfy validated warfighter capability needs.

Letter of Compliance—a letter documenting compliance/non-compliance with CNS/ATM performance requirements provided by the COE.

Memorandum of Agreement—a document that defines general areas of conditional agreement between two or more parties—what one party does depends on what the other party does (e.g., one party agrees to provide support if the other party provides the materials). MOAs that establish responsibilities for providing recurring reimbursable support should be supplemented with support agreements that define the support, basis for reimbursement for each category of support, the billing and payment process, and other terms and conditions of the agreement. Reference DODI 4000.19.

Memorandum of Understanding— a document that defines general areas of understanding between two or more parties—explains what each party plans to do; however, what each party does is not dependent on what the other party does (e.g., does not require reimbursement or other support from receiver). Reference DODI 4000.19.

Modification—a change to the form, fit, function, or interface of an in-service, configuration-managed AF asset.

Operational Approval—the process and documentation verifying an aircraft’s CNS/ATM and navigation safety systems meet CNS/ATM capability standards before operational use. Lead MAJCOMs approve operational use of CNS/ATM and navigation safety systems. Operational approval is based upon compatibility with CNS/ATM performance requirements including adequacy of training, operating procedures, maintenance, and logistics support. MAJCOMs ensure that required aircrew and maintainer proficiency and training is maintained and documented, and that flight manuals, technical orders, and operating instructions are updated to include appropriate procedures and information on CNS/ATM use and functions (AFI 11-202V3, *General Flight Rules*, 22 October 2010, paragraphs 2.16 – 2.16.2).

Performance Assessment—the process that results in a Performance Assessment Report (PAR) that documents CNS/ATM functionality added to an aircraft, and the degree to which the integrated systems perform with respect to the applicable CNS/ATM performance requirements. This report, along with other applicable artifacts, is prepared specifically in support of the operational approval process.

Performance Requirement—a requirement defining the extent to which a mission or function should be executed, generally measured in terms of quantity, quality, coverage, timeliness, or readiness.

Program—systems, subsystems, end items, services, or activities on the AF acquisition master list, systems in sustainment, weapon systems designated in AFD 10-9, or identified as services category activities.

Program Executive Officer—the individual dedicated to executive management and supervision of a portfolio of mission-related Acquisition Category (ACAT) and selected programs. The PEO shall be chartered by and is accountable to the Service Acquisition Executive (SAE).

Program Manager—in accordance with DODD 5000.01, the PM is the Air Force designated individual with responsibility for and authority to accomplish system objectives for development, production, and sustainment to meet the user’s operational needs. For systems in acquisition, the PM is accountable for credible cost, schedule, performance, and materiel readiness to the MDA. For systems in sustainment, the PM is accountable for credible cost, schedule, performance, and materiel readiness to the AFMC/CC, AFSPC/CC, or designee. ACAT I and ACAT II PMs will

be chartered by the SAE and the PEO. Delegated ACAT II and III PMs shall be chartered by the PEO.

Radio Frequency Equipment Certification—approved Military Communications-Electronics Board application for radio frequency allocation (DD Form 1494) and associated Joint Frequency Working Group file number.

Stakeholders—individual or organizational entities (users, developers, acquirers, technologists, testers, budgeters, sustainers, and industry) that are, or will be, associated with implementing and supporting the associated system, subsystem, or end item capability requirements.

Tailored Performance Matrix—a set of performance requirements for each unique CNS/ATM capability. Compliance with this set of performance requirements will ensure the aircraft conforms to CNS/ATM capability standards. TPMs form the basis for the aircraft's CNS/ATM performance requirements and assessment.

Technical Airworthiness Authority—the AF official authorized to define airworthiness standards, approve the certification basis, issue findings of compliance, and issue Military Type Certificates and other flight releases (AFI 62-601, Attachment 2).

Technical Data—information, regardless of the form or method of the recording, of a scientific or technical nature, including computer software documentation. As applied in this publication, it includes information required for the design, development, production, manufacture, assembly, operation, training, testing, repair, maintenance, or modification of defense articles. Relative to software it includes information on system functional design, logic flow, algorithms, application programs, operating systems, and support software for design, implementation, test operation, diagnosis, and repair. It does not include computer software or data incidental to contract administration or general scientific, mathematical, or engineering principles commonly taught in schools or information in the public domain.

Total Ownership Cost—total ownership cost encompasses all costs associated with development, production, operations, support, and disposal of a weapon system.

Type 1 Data Chain Letter of Acceptance (LOA)—the Type 1 LOA provides recognition that a data supplier's processes for producing aeronautical data comply with FAA AC 20-153a, RTCA/DO-200A and the data quality requirements of the user with no identified compatibility with an aircraft system.

Type 2 Data Chain Letter of Acceptance (LOA)—the Type 2 LOA provides recognition that the various links (organizations) in the data chain do not corrupt, nor do they alter, any of the data quality attributes of the supplied data. This LOA also recognizes the link's (organization's) compliance with FAA AC 20-153a, RTCA/DO-200A and the data quality requirements of the user. The Type 2 LOA also identifies compatibility of the delivered data with a particular avionic system (navigation solution).