

# MIKE NICOL

SENIOR ASSOCIATE, DAYTON AEROSPACE, INC.

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## PROFILE

Experienced engineer with over 40 years of experience in US Air Force (USAF) weapon systems and software acquisition. Established USAF software policy, processes, guidance, and training. As USAF Technical Advisor for Embedded Computer Systems Software, supported and collaborated with Aeronautical Systems Center (ASC) (now the Air Force Life Cycle Management Center (AFLCMC)); Air Force Materiel Command (AFMC); Office of the Secretary of Defense (OSD); and other military services on software practices, technical studies, and evaluations to establish cost-effective solutions for weapon system programs. Led and/or supported independent technical reviews covering most aeronautical systems in the USAF inventory. Served as a member of the USAF Airworthiness Certification Board. Senior Leader (SL), Department of the Air Force (DAF) (Retired).

## PRINCIPAL AREAS OF EXPERTISE

### Software Acquisition Management and Engineering

Led the USAF Software Intensive Systems Strategic Improvement Program (AFSSIP), which produced USAF software policy, the *Air Force Weapon System Software Management Guidebook*, and associated training. Defined the USAF core software metrics and provided software consultation and guidance for multiple ASC acquisition programs. Institutionalized realistic, conservative software estimates to form the basis for lower risk acquisition programs that meet cost, schedule, and performance expectations. Performed independent estimates of software development cost, schedule, and staffing.

### Technical Program Management

Chaired and supported numerous independent technical reviews for a range of programs including F-15, F-16, F-22, F-35, B-2, B-52, C-17, C-130, U-2, Global Hawk, Predator/Reaper, and others. Incorporated software coverage in the Air Force Systems Engineering Assessment Model (SEAM). Experienced in the application of Department of Defense (DOD) Program Support Reviews (PSRs), Technology Readiness Assessments (TRAs) for software, and the assessment of software program risk and confidence. Supported multiple airworthiness assessments for software.

### Leadership and Mentoring

Developed software training for USAF and ASC personnel, and trained several hundred-program management and engineering professionals in USAF software acquisition. Led and participated with multiple groups and teams to develop and deploy improved software acquisition and engineering processes. Developed and delivered training to address airworthiness assessment for MIL-STD-516 Section 15 (Computer Resources).



## DAYTON AEROSPACE

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## EDUCATION

**BS, Electrical Engineering**  
Ohio Northern University

**MS, Computer Systems**  
Air Force Institute of Technology

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## KEY POSITIONS

**Technical Advisor, Embedded  
Computer Systems Software**  
ASC/EN (now AFLCMC/EZ)

**Technical Advisor, Computer Systems  
and Software**  
ASC/ENAC (now AFLCMC/EZAS)

**Technical Expert**  
ASC/ENC, ENAS & ENAC (now  
EZAS)

**Computer Systems Integration  
Engineer**  
ASC/YSE (B-2) (now  
AFLCMC/WWZ)

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## ORGANIZATIONS

**Air Force Association (AFA)**

**Institute of Electrical and Electronics  
Engineers (IEEE)**  
Senior Member

**Senior Executives Association (SEA)**

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## WORK HISTORY

### Senior Associate | Dayton Aerospace, Inc.

2011-present, *Dayton, OH*

Provide senior-level support to government and industry customers. Specialties include weapon system software acquisition and development, software effort and schedule estimation, computer resources (software) airworthiness support and assessments, systems and software engineering, independent technical reviews, program support reviews (PSRs), technology readiness assessments, integrated master plan/schedule (IMP/IMS) development and execution, and information assurance (IA).

### Technical Advisor, Embedded Computer Systems Software | ASC/EN (now AFLCMC/EZ)

2002-2010, *WPAFB, OH*

Led the USAF software process improvement program in response to a Congressional mandate. Developed USAF and ASC-level software policy, led the development of the USAF *Weapon System Software Management Guidebook*, and developed USAF software training. Developed USAF core software metrics. Provided technical consultation to ASC programs and source selections, other USAF organizations, DOD agencies, and industry on software policy, practices, and technical studies/evaluations. Led or supported independent reviews of F-22, F-35, Predator/Reaper, Global Hawk, AT-6C, B-52 CONECT, and C-130 AMP. Supported Office of the Secretary of Defense (OSD) PSRs for Global Hawk and Army Sky Warrior. Implemented improved software coverage in the Contractor Performance Assessment Reporting System (CPARS) and the USAF Probability of Program Success (PoPS) tools. Served as DOD Co-chair of the Capability Maturity Model Integration (CMMI) Steering Group. Developed and delivered software training to the ASC workforce.

### Technical Advisor, Computer Systems & Software | ASC/ENAC (now AFLCMC/EZAS)

2002-2010, *WPAFB, OH*

Led AFMC study on weapon system software sustainment in response to concerns from the Chief of Staff and SecAF. Developed ASC approach and response to DOD policy for independent reviews of software-intensive programs and for the congressionally-mandated information technology registration effort. Chaired reviews of AC-130U Gunship software metrics and B-2 TPS development. Co-chaired the U-2 Deployable Ground Intercept Facility (DGIF) Red Team. Supported CASMIS Red Team and Joint Strike Fighter (JSF) engineering and manufacturing development (EMD) Software Development Executability Review. Provided extensive support to the JSF program office on software acquisition issues as well as planning and source selection.

### Technical Expert | ASC/ENC, ENAS and ENAC

1999-2002, *WPAFB, OH*

Led implementation of the ASC Year 2000 weapon system process: chaired ASC working group to develop Y2K strategies and solve common problems, authored and maintained the Weapon System Strategy for Year 2000, and reviewed and approved Y2K status for all Designated Acquisition Commander (DAC) portfolio systems for the ASC Commander. Chaired Independent Review Teams for B-2 Test Program Set (TPS) Development and Translated Range GPS System. Supported reviews for F-16 OFP Cost Reduction, TSSAM Mission Planning System, F-15 OFP Red Team, F-16 Modular Mission Computer, C-17 Defense Science Board Review, and Space Station Freedom Design Review. Served as deputy chair for Improvement of Software Acquisition Processes (ISWAP) AFMC Process Action Team, which integrated command-wide software acquisition processes within the weapon system acquisition process. Supported ASC program offices in computer systems and software (CS&S) acquisition, including Software Development Capability Evaluation (SDCE) application and tailoring, computer programming language selection and waivers, and software testing issues.

### Prior to 1999

- B-2 Computer Resources Systems Integration Engineer, ASC/YSE, *WPAFB, OH*
- B-2 Lead Training System Engineer, ASD/YSE, *WPAFB, OH*
- Electronics Engineer, ASD/YWES, ASD/ENETV, and Air Force Human Resources Laboratory (AFHRL/ASM), *WPAFB, OH*

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## KEY PROJECTS

- Provided direct support of airworthiness certification, specification verification, and software acquisition to the USAF KC-46 program office.
- Authored a Transition to Sustainment Plan (TSP) to support transfer of software development and sustainment to a third party for a major information technology system.
- Supported an OSD Program Support Assessment (PSA) for a major DOD weapon system development.
- Developed and delivered detailed airworthiness certification training for computer resources for multiple customers.
- Supported development of the technical approach for the information assurance section of a winning proposal for a training system development effort.
- Supported development of the integrated master plan (IMP) and integrated master schedule (IMS) for an aircraft subsystem development effort
- Supported an industry customer as a member of an independent review team to assess a major weapon system program schedule and progress toward first flight and the completion of engineering and manufacturing development (EMD).
- Developed an independent software cost, schedule, and staffing estimate for a major foreign military sale (FMS) program.
- Supported airworthiness assessments for MIL-HDBK-516 Section 15 (Computer Resources) for multiple weapon system programs.
- Participated as a member of a Congressionally requested independent review of software development for a major DOD weapon system program.
- Supported specification verification and airworthiness certification activities for a new major USAF acquisition program.

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