

Kenneth Benitez

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SUMMARY

Senior mechanical systems design engineer with 10 years of aerospace experience developing, integrating, and maturing aircraft fluid, thermal, hydraulic, fuel, equipment, and mechanism subsystems. Leads work from allocated requirements and component specifications through three dimensional product definition, two dimensional drawing review, verification, production support, and supplier coordination. Uses NX, Teamcenter, **ANSYS Thermal Desktop**, Matlab, Simulink, **Simcenter Amesim**, Flomaster, and **Magic Systems of Systems Architect** to connect design decisions with analytical and test evidence. Has guided multidisciplinary teams, resolved technical issues, mentored engineers, improved design review practices, and supported controlled aerospace programs. Brings practical experience with pumps, valves, **heat exchangers**, sensors, controls, tubing, brackets, and aircraft installations, with a clear focus on reliable designs and sound engineering decisions.

EXPERIENCE

Senior Mechanical Systems Design Engineer

January 2024 to Present

Summit Aeronautical Systems

Belleville, IL

Leads **mechanical subsystem design** and integration for a military aircraft modernization program, guiding requirements, product definition, verification, supplier execution, mentoring, and production support.

- Led **fuel**, hydraulic, cooling, and mechanism integration from requirements through released product definition.
- Matured NX and **Teamcenter** designs for pumps, valves, heat exchangers, sensors, controls, and installations.
- Integrated analysis, bench testing, and aircraft test evidence to close compliance items with engineering teams.
- Managed three suppliers through specifications, design changes, qualification evidence, **production** concerns, and corrective actions.
- Applied **ANSYS Thermal Desktop** and Simcenter Amesim results to guide thermal and fluid design decisions.
- Mentored engineers and improved reusable checklists for subsystem design reviews and **verification** planning

Mechanical Systems Design Engineer III

July 2020 to December 2023

Prairie Sky Aerospace

St. Louis, MO

Owned aircraft cooling and hydraulic equipment integration, combining detailed product definition, **supplier development**, **analytical evidence**, model based systems engineering, and future concept evaluation.

- Integrated cooling and hydraulic installations around performance, maintainability, structural, routing, and production needs.
- Maintained **NX** models, assemblies, and Teamcenter product definition while resolving configuration issues.
- Created component specifications for valves, heat exchangers, sensors, and controls, then guided supplier reviews.
- Connected Matlab, **Simulink**, and Flomaster analysis with test data for subsystem verification evidence.
- Applied **Model Based Systems Engineering** and **Magic Systems of Systems Architect** for traceable multidisciplinary reviews.
- Compared emerging sensing and component technologies before recommending candidates for future aircraft studies

Mechanical Design Engineer II

June 2018 to June 2020

Gateway Flight Technologies

Chesterfield, MO

Developed mechanical and fluid system installations for **commercial aircraft** modification programs, supporting aircraft interfaces, **supplier coordination**, analysis, testing, and production focused design reviews.

- Developed **equipment** and fluid installations that connected requirements with aircraft space and interfaces.
- Created NX models, managed Teamcenter data, and interpreted legacy **two dimensional engineering drawings**.
- Documented hydraulic and fuel component conditions, interfaces, materials, and verification needs for review.
- Integrated analysis and test observations to resolve fit, routing, vibration, and thermal concerns.
- Coordinated supplier questions and drawing changes through clear issue records and aircraft integration reviews.
- Created a design review worksheet covering interfaces, producibility, maintainability, and requirement coverage

Associate Mechanical Systems Engineer

June 2016 to May 2018

Midwest Aircraft Engineering

St. Louis, MO

Performed supervised aircraft equipment and fluid system design assignments, building foundational capability in requirements, interfaces, controlled product definition, analysis support, and multidisciplinary reviews.

- Executed supervised design assignments for aircraft **equipment** and fluid system installations.
- Produced NX models and drawing updates for brackets, tubing supports, mounts, and **mechanisms**.
- Reconciled two dimensional drawings with three dimensional geometry to identify interface conflicts before release.
- Prepared analysis inputs and organized hydraulic and thermal **test results** for verification packages.

- Coordinated technical questions with manufacturing and suppliers under formal configuration control.
- Presented design status during multidisciplinary reviews and documented technical actions through closure

PROJECTS

Aircraft Fluid System Integration Study 2023

A good design earns trust before production. Evaluated pump, valve, heat exchanger, sensor, and control interfaces with Matlab, Simulink, and Flomaster evidence for a future aircraft concept.

Thermal Design Verification Workflow 2022

Small process choices shape large program outcomes. Connected ANSYS Thermal Desktop results, test observations, requirements, and review records into a reusable verification workflow.

LEADERSHIP & AWARDS

- Senior engineering recognition for resolving aircraft subsystem integration issues and supporting program objectives.
- Team leadership recognition for mentoring mechanical engineers and improving design review and verification checklists.
- Engineering contribution recognition for supplier coordination, product definition quality, and controlled release support.

EDUCATION

Bachelor of Science in Mechanical Engineering

2016

Missouri University of Science and Technology GPA: 0

Rolla, MO

Coursework: Mechanical design, fluid mechanics, thermodynamics, materials science

CERTIFICATIONS

- Siemens NX Advanced Design Certificate  2021
- Model Based Systems Engineering Continuing Education Certificate  2023

TECHNICAL SKILLS

- **CAD and Product Data:** NX, Teamcenter, three dimensional CAD
- **Engineering Drawings:** Two dimensional drawings, product definition, configuration control
- **Thermal Analysis:** ANSYS Thermal Desktop, thermodynamic systems, heat exchangers
- **Modeling and Simulation:** Matlab, Simulink, Simcenter Amesim
- **Fluid Analysis:** Flomaster, pumps, valves
- **Aircraft Fluid Systems:** Fuel systems, hydraulics, environmental cooling
- **Requirements Engineering:** Component specifications, allocated requirements, traceability
- **Verification Engineering:** Verification planning, validation, bench testing
- **Systems Engineering:** Model Based Systems Engineering, Magic Systems of Systems Architect, interface management
- **Aircraft Mechanical Design:** Mechanisms, equipment installations, landing gear
- **Supplier Engineering:** Supplier development, qualification testing, production readiness
- **Design Release:** Engineering release, drawing review, lifecycle product definition

SKILLS

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|----------------------------|-------------------------|-------------------------------|-----------------------------------|
| • Mechanical system design | • Environmental cooling | • Two dimensional drawings | • Model based systems engineering |
| • Aircraft fluid systems | • Thermal analysis | • Supplier development | • Multidisciplinary engineering |
| • Fuel systems | • NX and Teamcenter | • Verification and validation | • Product lifecycle support |
| • Hydraulics | • Three dimensional CAD | • Test integration | |

PROFESSIONAL AFFILIATIONS

- Multidisciplinary aerospace engineering review teams supporting systems, structures, manufacturing, quality, suppliers, and test.
- Professional engineering communities focused on aircraft mechanical systems, fluid systems, thermal design, and product lifecycle practice.

LANGUAGES

- English (Native)
- Spanish (Proficient)

ADDITIONAL INFORMATION

Work Status : Authorized to work in United States. No sponsorship required.

REFERENCES

AVAILABLE ON REQUEST