David J. File

Project Engineer

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Systems Definition & Project Lead

As an experienced engineer I am able to solve the key concerns as derived from design objectives. Conceptual and configuration design efforts succeed when a relevant systems approach is selected with an eye on producability. In a structures or mechanical role I can fully define, specify and produce a prototype system quickly.

As a project lead my goal is to direct the talents of team members and maintain the product's advancement towards an initial, low cost and risk-reduced implementation.

- Composites
- Conceptual Design
- Hypersonic Aero & Propulsion
- Hot Structures
- Orbital Express (DARPA)
- Unmanned Air Systems (UAS)
- Predators: A, B & C, Amber
- Particle Calorimetry
- Quantum & Optical Physics
- C++ / Matlab / Root / Linux
- CATIA / ProE / Unigraphics / Solidworks / Misc.

Education: **MS, Physics, University of Kansas, 2009**
BS, Aerospace Engineering, University of Kansas, 1985
Patents: **US7789343B2, US20090206193A1, 2006**
Paper: **First Flyers for Martian Exploration, AIAA-2000-5280, 2000**
Award: **Boeing Prototyping Team, 2004**

Employment (recent):

Protev Research - Oceanside, CA	2019-Current
Aeronautical Systems, Inc., General Atomics, Adelanto, CA	2009 - 2018
University of Kansas, Lawrence, KS	2007 - 2009
The Boeing Company, Huntington Beach, CA	1998 - 2006

Employment Experience:

Unmanned Aircraft / Prototyping / Structural Definition

I am fortunate to have been involved with numerous prototyping efforts which were eventually fielded with great success.

AMBER – The epitome of UAV success this aircraft was the granddad of the current Predator fleet. Performed diverse and varied tasks in prototyping the Amber unmanned air vehicle. Designed and produced mockup and captive airframe for Lincoln Laboratories. 1985-1988
Predator A – First drawing package, from scratch for production efforts. 1996-1997
Improved Grey Eagle – Created and completed over 150 components within 700 hrs. 2010
Predator C, Avenger – Fuselage design/manufacturing support, AC3-AC4. 2011-2012
Predator B, DRR/ACAS/NASA – Re-lofted nose radome and completed composite assembly design and work orders. Also, prototyped lower radome, EO/IR for SAFRAN installations. 2014-2016

X-37A – Structural, mechanical, flight controls: mechanical layout, integration and design including structural installation drawings and vehicle configuration tasks. 2002
UCAV – Designed and wind tunnel tested morphing concept utilizing (patent), ballistically deployed wing (applied). 2005-2006

Physics Research – University of Kansas, 2006-2009

Lab experience and special projects covering Particle, Quantum and Biophysics.

Particle/Nuclear Physics – Conducted calibration of an organic scintillator and PMT using various isotopes (Bi207, Cs135 and others). Designed bench hardware and applied an object oriented approach to controlling a VME instrumented setup. Results demonstrated the various concerns in collecting, maximizing and calibrating the energies of scintillator photons.
Calorimetry – Developed basic particle science understandings, C++ programming, VME/DAQ and math skills.
Quantum – Random walk Mathematica projects focused on evaluating a density matrix approach. Current efforts involve molecular simulation tool construction, open systems modeling and an MC toolkit.
Teaching Assistantships – Four semesters of basic physics lab instruction, 3 sections and approx. 65 students per semester.

Systems Definition – The Boeing Company, 1996-2000

Connecting a given approach to the customer's needs and expectations is vital. There are usually several solutions to a given set of requirements. After determining the overall design-space the following steps develop appropriate strategies for success by investigating combinations of risk and planning.

Satellite Design – Integrated mission-unique orbital servicing systems and space vehicle structure. Configuration section lead and final briefing presenter, DARPA/Orbital Express.
Martian atmospheric aircraft – NASA conceived of a low cost mission to Mars in 2003 to commemorate the Wright Brother's first flight. Concept definition, report and presentations (AIAA-2000-5280).
Mars Sample Return – Co-designed the ascent propulsion and staging approach. Developed the design configuration for the return, ascent stage.
Space Solar Power – Performed conceptual layout and analysis of multiple satellite configurations.
X-Ray Telescope – Author, SBIR proposal for space based, deployable X-ray telescope. (L'Garde, 1998)