

KAREN GROTHE

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SUMMARY

I have 16 years of systems engineering experience in the aerospace industry managing requirements and conducting verification testing. I am returning to work after a break during which I completed a master's degree and a certificate program and improved my leadership and communication skills.

LEADERSHIP

- 2018-19 Membership Director for the International Council on Systems Engineering (INCOSE) [Los Angeles Chapter](#)
 - Integrated Operations Co-Chair for the [2019 INCOSE Western States Regional Conference](#)
 - 2018-19 Toastmasters club President: Opening Toastmasters meetings, conducting club officer meetings, and representing the club at area, division, and district events.
 - 2017-18 Toastmasters club Vice President for Education: Leading educational programming for club members, ensuring weekly meetings have functionaries, and orienting new members
 - Conference Presentations:
 - 2017 American Institute of Aeronautics and Astronautics (AIAA) Orange County (OC) Aerospace Systems and Technology (ASAT) Conference: [What's New with CubeSats?](#)
 - 2016 INCOSE Regional Mini-Conference: [Applying the Systems Engineering Process to a Conceptual Mercury CubeSat Mission](#)
 - 2016 AIAA OC ASAT Conference: [Applying the Systems Engineering Process to a Conceptual Mercury CubeSat Mission](#) and [Defending Earth from Asteroids](#)
 - 2015 AIAA OC ASAT Conference: [Microsatellites](#) and [Space Debris](#)
 - Led the INCOSE Student Division at Loyola Marymount University as President for two years.
 - 2015 President's Award for Outstanding Service to the INCOSE Los Angeles Chapter
 - Completed Toastmasters' [Competent Communicator](#) (10 speeches), Advanced Communicator Bronze (10 more speeches), and Pathways Leadership Development Levels 1 and 2 achievements
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EDUCATION

[Loyola Marymount University](#) – MS in Systems Engineering 2015
Technical Focus: Electrical Engineering

Key Courses: [Spacecraft Design](#), [Introduction to Communication Systems](#), Wireless Networks, [Project Management](#), [System Architecting](#), [Systems Thinking](#)

Systems Engineering Integrative Project

Topic: [Using the Systems Engineering Process for a Conceptual Mercury CubeSat Mission](#)

[UCLA Extension](#) – Astronautical Engineering Certificate 2015

Key Courses: Spacecraft Systems Design and Analysis, Space Mission Systems Engineering, Introduction to Satellite Communications

[Washington University in St. Louis](#) - BS in Electrical Engineering 1994

TECHNICAL SKILLS

Requirements management / specifications / interface control documents

Test procedures / acceptance testing / test reports

Applications: Adobe Acrobat, Word, Excel, PowerPoint, IBM Rational DOORS, STK, Visio

WORK EXPERIENCE

[Raytheon – Space and Airborne Systems](#), El Segundo, CA

Senior Systems Engineer I – Radar Systems Engineer

11/1999 to 6/2011

- Ensured the quality of software updates for an [airborne radar system](#) and associated special test equipment through acceptance testing (ATP), leading three ATPs and supporting several others.
- Authored and revised documents: Systems Engineering Management Plan (SEMP), Interface Control Documents (ICDs), requirements specifications, Radar Mode Verification Plans and Procedures, software qualification testing procedures, Software Trouble Reports, Software Change Requests, and acceptance testing procedures.
- Created Mission Performance Reports for the airborne radar using mission statistics compiled from Field Reports.
- Analyzed impacts to performance requirements, including signal-to-noise ratio (SNR), for three radar modes in the Critical Item Development Specification for a [Radar Modernization Program \(RMP\)](#).
- Presented mode performance analysis results at the RMP Systems Requirements Review and the RMP Systems Design Review.
- Evaluated radar data from flight test and labs using FORTRAN tools and modified the analysis tools as needed to evaluate radar mode changes. Documented and tested mode analysis software tools following migration onto an upgraded computer.
- Performed analysis for Software System Trouble Reports (SSTRs) for a radar mode, generating requirements for solutions to two SSTRs and supporting the implementation and testing of the changes recommended.
- Completed Raytheon Six Sigma projects to improve the flight test data request process and to improve the flight test videos library check-in/check-out procedures for the radar program.

[Boeing - Commercial Airplane Group](#), Long Beach, CA

Senior Engineer

9/1997 to 10/1999

- Modified code for the electrical system model in [an aircraft](#) Development Simulator to allow the simulator to be converted into a modified aircraft simulation for development in a [contract for FEDEX](#). Integrated that code into the Development Simulator.
- Facilitated customer operation of the simulator to do testing and troubleshooting on avionics boxes.

[McDonnell Douglas Aerospace](#), St. Louis, MO

Senior Engineer

1/1995 to 8/1997

- Prototyped an embedded processor model for a cost-reduction demonstration.
- Authored a software requirements specification for vendor's training equipment simulations. Specified [aircraft](#) data for vendor to use in designing training software. Verified aircraft system information for simulation models. Reviewed vendor data and drawings.
- Executed acceptance testing of [Simulated Aircraft Maintenance Trainers](#) at vendor's facility.

AFFILIATIONS

[International Council on Systems Engineering \(INCOSE\)](#)
[American Institute of Aeronautics and Astronautics \(AIAA\)](#)
[Institute of Electrical and Electronic Engineers \(IEEE\)](#)

[Society of Women Engineers \(SWE\)](#)
[The Planetary Society](#)
[Toastmasters](#)