

Curriculum Vitae

310-741-0448
dafeshconsulting@gmail.com

Philip A. Dafesh, PhD

Expertise

- GPS Signal Design
- Assisted GPS Technology
- GPS Receiver Development
- Signal Acquisition Technology
- Wireless Communications
- Software Defined Radios
- Cognitive Radio Technology
- Satellite Communications
- GPS in wireless devices
- Interference Mitigation
- Sensor Technology
- GPS tracking technology

Experience Summary

Dr. Dafesh has 36 years of technical and management experience. In his current position as a distinguished engineer, he conducts design, development and analysis of communication and navigation systems technology for terrestrial and satellite applications. He has served as an expert witness and consulting expert in the areas including cellular based GPS tracking devices, GPS in cellular and wireless devices, assisted GPS, indoor GPS, GPS signal acquisition technology, and GPS used in automobile navigation technology and has done extensive work in GPS technology for over two decades.

Dr. Dafesh is currently a Distinguished Engineer at the Aerospace Corporation where he leads the development and analysis of communication, GPS, and other navigation systems technologies for terrestrial, lunar and satellite applications. He has conducted applied research in GPS and wireless communication technology development in the areas of signal design, transmitter and receiver design, hardware implementation, software implementation, reconfigurable electronics, spread-spectrum systems, and alternative satellite navigation systems. Dr. Dafesh has written 68 and has 21 patents in GPS, optical and wireless communication technology development. In 2026, Dr. Dafesh was elected to the rank of Fellow by the institute of navigation for seminal and sustained innovations to the design of modern satellite navigation signals, receiver implementations, and anti-jam technologies.

Key Inventions

- Invented the Coherent Adaptive Subcarrier Modulation (CASM) approach used by the Galileo Satellite System.
- Invented the Phase Optimized Constant Envelope Transmission method being applied to future GPS III satellites.
- Invented the Cognitive Antijam Receiver
- Co-Invented the Blind Interference Signal Suppression Approach to reducing interference in GPS receivers
- Participated in the design and analysis of the L2C GPS signal, L1C GPS signal, M-code GPS signals and associated receiver implementations.
- Performed extensive development and analysis of GPS acquisition signals and receiver signal acquisition implementations for operation under weak signal conditions or in the presence of interfering signals.
- Led the development of software defined GPS receivers and transmitters for the assessment of modernized GPS signals and signal processing approaches.
- Led the development of software defined GPS and GNSS signal emulators.
- Conducted research in asset tracking technology using GPS

Software Defined Radio Technology Development

- Led a team of digital, RF, mixed signal and system design engineers to develop software defined radio proof-of-concept implementations employing state of the art RF chipsets, GPS chipsets, FPGAs, embedded software and VHDL.
- Led development of a high-performance, flexible, low power software-defined receiver/transmitter mobile station (MS) with integrated peripherals including GPS, user and data interfaces.
- Invented cognitive radio techniques as applied to interference mitigation in GPS and communication receivers.

Wireless Technology

- Led the development and application of software radio-based satellite communication system emulators to assess the compatibility of satellite systems with wireless communication networks such as WCDMA, WiMAX and LTE
- Led the development of channel emulators to study the impact of Doppler, phase noise, multi-path, fading and interference on wireless system performance.
- Directing the development of a wireless signal emulator to examine the interference effects of communication signals from wireless networks

Internal Research and Development Projects

Principal Investigator (PI) or co-PI of the following research projects:

- Blind Interference Signal Suppression (BLISS)
- Autonomous Integrity Monitoring
- Practical Implementation of Cyclostationary Techniques for Receivers
- Wireless Applications to Space Programs (WASP)
- Cognitive Antijam Radio System (CARS)
- Dual Parity Check (DPC) Logic Implementations
- Cognitive Radio Interference Detection (CRID)
- Advanced Reconfigurable Modulation System (ARMS)
- Reconfigurable Advanced Modem Processing
- Optical Spread Spectrum Communications
- Advanced Communication Signal Processing
- Low-background Spectral Test System

Employment History

From Nov. 1987 to Present: **The Aerospace Corporation**

Oct 2019-Present Distinguished Engineer

- Responsible for the definition and direction of advanced prototype developments and research relating to GPS and communication transceiver technology. Expert in GPS receiver implementations and software defined radio technology. Leads applied research and study efforts pertaining to advanced GPS receivers, interference mitigation, alternative positioning approaches, and related technologies.

Aug 2016- Oct 2019 Principal Engineer

- Responsible for the definition and direction of advanced prototype developments and research relating to GPS and communication transceiver technology. Expert in GPS receiver implementations and software defined radio technology. Led

applied research efforts pertaining to interference mitigation, alternative positioning approaches, and related technologies.

Feb 2007 – Aug 2016 Director, Digital Communication Implementation Dept.

- Responsible for management and technical direction of twenty-seven members of the technical Staff and four subordinate managers
- Principal Investigator for internal research and development efforts including cognitive radio interference detection, cognitive anti-jam radio systems, wireless communication systems, and constant envelope transmission methods.
- Technical Lead for GPS system study involving assisted GPS using satellite communication. Designed communication waveform, data structure and analyzed assisted GPS receiver performance benefits as compared to unassisted GPS systems.
- Led development of a state-of-the art portable handheld software defined radio design incorporating GPS receiver, FPGA, ARM micro-processor, reconfigurable RF section, SD memory interface, data and video input and output interfaces, and a user interface
- Directed staff supporting over 10 different software radio implementation projects for RF communication and GPS systems.
- Direct staff members conducting simulation, analysis and hardware proof-of-concept studies for new communication and navigation system concepts including upgrades to transmitters and receivers used for weather/imaging systems, communication systems and GPS devices and tracking and locating systems based on GPS and other technologies

2004 – 2007 Assoc. Director, Digital Communication Implementation Dept.

- Provided technical direction and management to a high-caliber team of technical staff. This team conducts a wide range of activities including system concept design, requirements development, testing, analysis, software design, hardware design, software implementation, and hardware implementation as applied to space-based communication and navigation systems.
- Conducted research and engineering support in signal design, receiver signal processing, signal monitoring, and software defined transmitter and receiver development including upgrades to transmitters and receivers used for weather/imaging systems, wireless communication systems, and GPS devices
- Provided key contributions to the GPS signal modernization program in areas including GPS data message design and modulation design for M-code, L2C and L1C signals and investigation of alternative system concepts.
- Conducted GPS code acquisition performance analysis under various assumptions including calculation of receiver time to first fix (TTFF) under warm start, cold start, and hot start conditions, with or without recently downloaded broadcast ephemeris and/or almanac. Investigated the impact of receiver

technology, including hardware complexity, on TTFF.

- Collaborated on, and delivered impartial evaluations of, several commercial and military GPS receiver technologies, including advanced algorithms and methods used for acquiring and tracking GPS signals, as well as establishing the sensitivity thresholds of these receivers.

2000 – 2004 Manager, Signal and Waveform Processing Section

- Managed ten staff members conducting analysis and hardware design and measurements of GPS receivers and modulators, fiber-optic CDMA systems, and wireless communication systems.
- Received “Best Paper of Session” award at the ION GPS 2000 Conference for my paper entitled, “Compatibility of the Interplex Modulation Method with C/A and P(Y) code Signals.”
- Invented two spread spectrum patents dealing with optical spread spectrum communications and GPS signal acquisition. These patents are entitled Direct-Sequence Spread-Spectrum Optical Frequency Shift Keying Code-Division-Multiple-Access Communication System (now U.S. Patent No. 7,200,342) and Spread-Spectrum Bit Boundary Correlation Search Acquisition System (now U.S. Patent No. 7,042,930). The GPS acquisition method is a method for obtaining bit sync during acquisition to improve acquisition signal sensitivity by enabling longer coherent integration periods without external NAV data aiding (i.e., conventional assisted GPS) using massive parallel correlators. This approach is applicable to weak signal detection for in-building emergency 911 (E911) GPS applications.

Conducted extensive design and simulation of receiver code tracking loops, carrier tracking loops, and code acquisition approaches.

- Specified the purchase of RF measurement equipment, subsystem components and CAD software for the simulation, prototype and measurement of GPS and wireless communication systems.
- Developed end-to-end proof-of concept (prototype) hardware systems and directing of all facets of these developments from system design and analysis to detailed RF, digital and mixed signal design, and implementation.
- Proposed and led Internal Research and Development (IRAD) efforts pertaining to software-defined-radio technology and conducted research in optical CDMA communication systems.

1997– 2000 Engineering Specialist, Telemetry and Command Department

- Provided engineering support to the GPS program office as well as various space-based communication efforts.

- Developed a flexible GPS receiver approach and directed a team consisting of RF, digital, PCB layout and software designers.
- Specified the procurement of capital and overhead items including workstation hardware, CAD software, RF hardware, and digital hardware.
- Led the design, simulation, and implementation of a transmitter and FPGA-based GPS receiver system brassboard used to prove out concepts for the GPS modernization program.
- Contributed to the design of the 2nd GPS civilian signal, L2C.
- Invented a novel "Gated Time Division Multiplexed Spread Spectrum Correlator (now U.S. Patent No. 7,130,326) that was used to mitigate the implementation impact of the new L2C GPS signal.
- Received Aerospace Invention Awards for the inventions: "Quadrature Product Subcarrier Modulation (1999)" – now US Patent No. 7,120,198, and "Coherent Adaptive Subcarrier Modulation (1999)" – now US Patent No. 6,430,213 - a variation of which is used to modulate the modernized GPS signals today, and has been applied to the European Galileo navigation system.
- Received an Aerospace Individual Achievement Award for "leading the development of a flexible GPS receiver" (1999) and a GPS Signal Development Team Excellence Award for "Contributions to the Development of the Next Generation GPS Signal" (1999).

1995 – 1997 Project Engineer, GPS Program Office

- Led Aerospace's support to the development of a GPS security module that contained all the code generation, signal acquisition and classified signal processing circuitry used in military P(Y)-code GPS receivers.
- Contributed to the development of GPS security module implementation and have conducted independent assessment of a variety of military GPS receivers, with emphasis on GPS acquisition signal processing and anti-jam performance.
- Led an interdisciplinary team of engineers specializing in areas including multi-chip module and tamper resistant coating development; microprocessor hardware and software design, analysis, and testing; ASIC design and testing; encryption system analysis and communication system analysis.
- Assessed the ultimate limits of acquisition sensitivity in terms of the number of parallel correlators, parallel frequency search capability, as well as coherent and noncoherent integration limits for state-of the art military GPS receivers.
- Served as the technical and project lead responsible for developing the GPS requirements for the Combat Survivor Evader Locator (CSEL) radio program. The CSEL is a compact handheld military communication radio transceiver used

to track the location of downed pilots using GPS and wireless communications.

- As a result of my efforts in support of CSEL, I was awarded a GPS JPO's "People's Choice Award" from The GPS program director, as well as letters of commendation from the Space and Missile Center (SMC) Commander and the CEO of the Aerospace Corporation.

1993 – 1995 Member of Technical Staff, Electro-Optical Systems Department

- Conducted independent experiments, performance testing and analysis of sensor devices used in satellite space systems.
- Developed low-noise data acquisition systems and electronics capable of testing the ultimate sensitivity of space-based sensor systems.
- Conducted research, involving sensor devices, fundamental material physics, and associated electronics, as well as designing sensor systems and conducting performance assessment of these sensors for use in new space systems.
- Designed and implemented new photorefectance modulation spectroscopy measurement techniques and applied these techniques to the discovery of new quantum-mechanical properties of synthetically designed semiconductor materials.
- Wrote extensive programs in "C" and C++ as tools to implement experimental measurement and analysis systems.
- Applied and implemented low-noise electronics, as well as digital control and data acquisition systems utilizing analog to digital converters and digital signal processing techniques for use in performance characterization of cryogenic sensors.
- Analyzed measured data used to assess sensitivity limits of low-background infrared sensors at liquid helium and liquid nitrogen temperatures.

1987 – 1993: Associate Member of the Technical Staff/Lab Associate, Sensor Physics Section

- Conducted fundamental research in the development of semiconductor devices and materials used in space systems.
- Conducted research in the modulation spectroscopy of engineered superlattice and multiple-quantum-well materials for application to improved optical sensors.

Litigation Support Experience

- Consulted in the areas of GPS, assisted GPS and cellular technology related to use in mobile devices, automobile navigation, GPS-based tracking, and geofencing
- Identified prior art for invalidity/obviousness and identified infringement evidence
- Conducted analyses including infringement, non-infringement, invalidity, arguments against invalidity, claim construction
- Wrote three initial expert reports on infringement, one on claim construction and one on domestic industry.
- Wrote two rebuttal reports on response to invalidity and response to non-infringement and one on response to invalidity and obviousness
- Wrote non-infringement and domestic industry reports for cases involving use of GPS for tracking cell phones and other mobile devices
- Deposed four times on expert reports and once for an IPR
- Reviewed software code, specifications, and reports
- Testified 2 days in the ITC (Appx. 12 hours of testimony)

Date:	2024	Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.
Case:		N/A
Project:		Pre-trial patent portfolio assessment
Role:		Expert responsible for explaining patented technologies related to GPS in cellular and mobile devices and ascertaining novelty of patent portfolio
Status:		Concluded
Date:	2022-	TechKnowledge Law Group LLP,
Case:		Beacon Navigation vs BMW
Project:		Supported Beacon Navigation in patent infringement case relating to automobile navigation and map matching
Role:		Expert responsible for development of infringement and response to invalidity as well as initial and rebuttal expert reports.
Status:		Settled
Date:	2020	Finnegan, Henderson, Farabow, Garrett & Dunner, LLP
Case:		u-blox AG, Japan Radio Co., Ltd, v. Broadcom Corp.
Project:		Supported uBlox in an IPR of Broadcom Patent related to Assisted GPS
Role:		and Multi-GNSS Expert responsible for Declaration on Invalidity, Obviousness, etc.,
Status:		Concluded in favor of u-blox

Date: 2019 **Fish and Richardson, LLP**
Case: Clubcar vs Yamaha
Project: Supported Yamaha Golf Car Company in identifying prior art
Role: pertaining to Golf cart geo-fencing technology before 2004.
Identified over ten 102 and 103 references for systems that contain golf
carts in a predefined area prior to 2004
Expert responsible for Identification of prior art, obviousness, etc.,
Status: Settled in 2020.

Date: 2014 **Kenyon & Kenyon LLP**
Case: Pragmatus Mobile vs Sony et al.
Project: Patent infringement involving a personal security and tracking system
(device capable of being worn or carried).
Role: Defense expert responsible for non-infringement and response to
domestic industry
Status: Settled in Aug 2014

2013 **Lee and Hayes**
Case: Denso Corporation vs Beacon Navigation GmbH
Project: Supported defense against IPR of the 6029111 patent
Role: Supported response to invalidity through a declaration and deposition
Status: Case ruled in favor of IPR petitioners

2011 **Freitas, Tseng, Baik and Kaufman**
Case: Beacon Navigation GmbH vs BMW, Suzuki Motor Corporation, et.al
Project: ITC Patent Infringement involving GPS in automobile Nav systems
Role: Expert responsible for Infringement for GPS patents related to
automobile navigation
Status: Case dismissed.

2010 **Wilmer Hale**
Case: CSR vs Broadcom
Project: ITC Patent infringement involving GPS in mobile wireless devices
Role: Defense expert responsible for non-infringement and invalidity
Status: Settled in Jan 2011

Date: 2007-08 **DLA Piper (Wilmer Hale)**
Case: SiRF vs Global Locate (Broadcom)
Project: ITC Patent infringement involving GPS in mobile wireless devices
Role: Consulting expert responsible for non-infringement and invalidity
Status: ITC finding in favor of defendant

Date: 2007-08 **DLA Piper (Wilmer Hale)**
Case: Global Locate (Broadcom) vs SiRF
Project: ITC Patent infringement involving GPS in mobile wireless devices
Role: Responsible for infringement, claim construction, response to invalidity and obviousness and domestic Industry for 000 and 080 patents (Testified in the ITC and deposed twice)
Status: ITC finding in favor of plaintiff

Date: 2001 **Kecker and Van Ness**
Case: Magellan vs Global Locate
Project: Contract dispute involving GPS technology
Role: Consulting expert identifying prior art
Status: Closed

Patents

1. Coherent Adaptive Subcarrier Modulation (CASM), U.S. 6,430,213B1
2. Quadrature Product Subcarrier Modulation (QPSM), U.S. 7,120,198B1
3. Spread-Spectrum Bit Boundary Correlation Search Acquisition System, U.S. 7,042,930 B2
4. Gated Time Division Multiplexed Spread Spectrum Correlator, U.S. 7,130,326B2
5. Direct-Sequence Spread-Spectrum Optical Frequency Shift Keying Code-Division-Multiple-Access Communication System, U.S. 7,200,342 B2
6. Phase-Optimized Constant Envelope Transmission (POCET) Method, Apparatus and System, U.S. 8,774,315 B2
7. Cognitive Anti-Jam Receiver Systems and Associated Methods, U.S. 8,515,335 B2
8. Linear Feedback Shift Register with Single Bit Error Detection, U.S. 8,990,669B2 B2

9. Phase-Optimized Constant Envelope Transmission (POCET) Method, Apparatus and System, U.S. 9,197,282 B2
10. Phase-Optimized Constant Envelope Transmission (POCET) Method, Apparatus and System U.S. 9,413,419 B2
11. Systems and Methods for Reducing a Relatively High Power, Approximately Constant Envelope Interference Signal That Spectrally Overlaps a Relatively Low Power Desired Signal, U.S. 9,391,654 B2
12. Circuits and Methods for Reducing an Interference Signal that Spectrally Overlaps a Desired Signal, U.S. 9,654,158B2
13. Circuits and Methods for Reducing an Interference Signal that Spectrally Overlaps a Desired Signal, U.S. 9,923,598B2
14. Circuits and Methods for Reducing an Interference Signal that Spectrally Overlaps a Desired Signal, U.S. 11,133,838 B2
15. Circuits and Methods for Reducing an Interference Signal that Spectrally Overlaps a Desired Signal, U.S. 10,574,288 B2
16. Amplitude Domain Circuits and Methods for Reducing an Interference Signal That Spectrally Overlaps a Desired Signal, U.S. 10,340,962B2
17. Suppressing Interference from Binary Offset Carrier Modulated Signals. U.S. 10,491,251B1
18. Circuits and Methods for Reducing an Interference Signal that Spectrally Overlaps a Desired Signal, U.S. 11,588,516 B2
19. Systems and Methods for Detecting a Communication Anomaly, US20200267171A1
20. "Narrowband antijam signaling system (NASS) and device," U.S. 11828869B2.

Education

1993	PhD EE (semiconductor devices)	University of California, Los Angeles
1992	Engineer Degree	University of California, Los Angeles
1990	MS EE	University of California, Los Angeles
1987	BS EE	California Polytechnic University, Pomona.
1987	BS Physics	California Polytechnic University, Pomona.

Professional Affiliations

- Member IEEE, ION, Sigma PI Sigma, Tau Beta PI.

Publications and Presentations

1. Philip A. Dafesh, Gourav K. Khadge, and Nathan S. Wong, "Flexible Data and Frame Synchronization Structure for the LunaNet PNT Signal," ION Pacific PNT Conference 2024, April 2024.
2. Philip A. Dafesh, "The Design of a Lightweight Military Navigation Signal," Joint Navigation Conference, June 2023.
3. Terry Ferrett and Philip Dafesh, "PNT Assessment Exercise (PNTAX) Results from Aiding Acquisition for an Increment 1 MGUE Receiver Using a Frequency-Hop Acquisition Using Secure TRANSEC (FAST) Prototype," Joint Navigation Conference, 2023.
4. Phil Dafesh and John Acheson, "BPSK vs BOC," Joint Navigation Conference, 2023.
5. Philip Dafesh and Gourav Khadge, "Assessment of Future Jamming Threats," Joint Navigation Conference, 2023.
6. *Nathan Whitehair, Sonya S. Ragothaman and Phil Dafesh*, "Application of Machine Learning for Rapid Jammer Classification," Joint Navigation Conference, 2023.
7. Philip Dafesh, Alex Eapen, Che-i (Jerry) Lien, and James T. Gillis, "Benefits of a Lightweight Military Navigation Signal for the Future Global Positioning System," Joint Navigation Conference, July 2022.
8. Philip Dafesh, Ron J. Trerotola, and Alex Eapen, "Advanced Y Code: Motivation, Benefits, and Opportunities," Joint Navigation Conference, July 2022.
9. Philip Dafesh, Eugene Grayver, and Terry Ferrett, "Software Radio Prototype of a Frequency Hop Acquisition Using Secure Transec (FAST) Receiver," Joint Navigation Conference, July 2022.
10. Philip Dafesh, "Military Advanced Signal Technology for Enhanced Radionavigation (MASTER)" The Aerospace Corporation, Joint Navigation Conference, July 2019.
11. P.A. Dafesh and A. Parower, "Signal Agnostic Navigation Denial (SAND)," Joint Navigation Conference, July 2018.
12. P. A. Dafesh, "Enhancing GPS PNT Resiliency with a Frequency Hop Acquisition," "Joint Navigation Conference, July 2018.
13. P.A. Dafesh and P.B. Hess, "Blind Interference Signal Suppression (BLISS): A New Single-Antenna Method for GPS Interference Suppression," Joint Navigation Conference, June 2017.

14. P. A. Dafesh and G. Kahdage, "Phase Optimized Constant Envelope Transmission (POCET) and the Method of Phantom Signals," Proceedings of the ION Pacific PNT Conference, May 1, 2017.
15. P. A. Dafesh, P. B. Hess and M.B. Tadjikov, "Design and Application of a Wireless into GNSS Interference Tool," Proceedings of the ION Pacific PNT Conference, April 2015.
16. Phil Dafesh, Esteban Vallés, and Paul D Massatt, "Antijam Benefits of High-power Satellite Assisted GPS," June 27, 2011.
17. P. A. Dafesh, R. Bow, T. Fan and J. Hsu, "Receiver Compatibility of POCET Signal Combining," Presented at the ION International Technical Meeting 2011, Jan 2011.
18. Alexander C. Utter, Clyde E. Edgar, Thomas D. Powell, and Philip A. Dafesh, "Cyclostationary Analysis of SVN-49 Signal Distortion," Presented at the ION International Technical Meeting 2011, Jan 2011.
19. P. A. Dafesh and C. R. Cahn, "Application of POCET Method to Combine GNSS Signals at Different Carrier Frequencies," Presented at the ION International Technical Meeting 2011, Jan 2011.
20. Esteban L. Valles, Raghavendra Prabhu and Philip A. Dafesh, "Phase Tracking with a Cognitive Antijam Receiver (CARS)," Proceedings Milcom 2010, October 2010.
21. Philip A. Dafesh, Raghavendra Prabhu, and Esteban L. Valles, "Cognitive Antijam Receiver System (CARS) for GNSS," Proceedings ION International Technical Meeting 2010, Jan 2010.
22. Raghavendra S. Prabhu, Esteban L. Valles, Philip A. Dafesh, "Cognitive Anti-Jam Radio System," Proceedings Software Defined Radio Forum Technical Conference 2009, Dec. 2009. **(Received Outstanding Paper Award)**
23. Jason Hsu, Alan Choy, Thomas D. Powell, and Alexander C. Utter and Phillip A. Dafesh, "Initial On-Orbit Observations of the L5 Demo Payload on GPS IIR-20," Proceedings ION GNSS 2009, Sept 2009.
24. P. A. Dafesh and C. R. Cahn, "Phase-Optimized Constant-Envelope Transmission (POCET) Modulation Method for GNSS Signals," Proceedings ION GNSS 2009, Sept 2009. **(Received Best Presentation Award)**
25. P. A. Dafesh, E. L. Vallés J. Hsu, C. R. Cahn, D. J. Sklar, and L. F. Zapanta, "Data Message Performance for the Future L1C GPS Signal," Proceedings ION GNSS 2007, Sept. 2007.
26. John W. Betz, M. A. Blanco, Charles R. Cahn, Philip A. Dafesh, et al, "Enhancing the Future of Civil GPS: An Overview of the L12C signal," Inside GNSS, Spring 2007.

27. P. A. Dafesh, "The Impact of Modernized GPS Signals on Achieving the E911 Mandate," GPS and Wireless Communications Panel Discussion, Wireless Telecommunications Symposium, 2006.
28. John W. Betz, Mario A. Blanco, Charles R. Cahn, Philip A. Dafesh, et al., "Description of the L1C Signal," Proceedings ION GNSS 2006, Sept. 2006.
29. P. A. Dafesh and E. Grayver, "Future GOES-R Global Ground Receivers," Proceedings SPIE Satellite Data Compression, Communication and Archiving III Conference, Aug. 2006.
30. John W. Betz, Charles R. Cahn, Philip A. Dafesh, et al., "L1C Signal Design Options," ION National Technical Meeting 2006, Jan 2006.
31. E. Grayver, P. Dafesh, M. Muha, and A. Moulthrop, "Performance Measurements of Turbo-Coded, Bandwidth Efficient Modulations in the Presence of a Nonlinear TWTA," Proceedings of 2005 SPIE Optics and Photonics conference, Aug 2005.
32. Eugene Grayver and Phillip Dafesh "Multi-Modulation Programmable Transceiver System with Turbo Coding," Proceedings of the 2005 IEEE Aerospace Conference, March 2005.
33. V. S. Lin, R. J. Speelman, C. I. Daniels, E. Grayver, and P. A. Dafesh, "Hardware Accelerated Simulation Tool (HAST)," Proceedings of the 2005 IEEE Aerospace Conference, March 2005.
34. T. Fan, V. S. Lin, G. H. Wang, K. P. Maine, P. A. Dafesh, 2Lt B. Myers, "The RF Compatibility of Flexible Navigation Signal Combining Methods," Proceedings of the 60'th annual ION National Technical Meeting, 2005, CA, Jan 2005.
35. Philip A. Dafesh, Paul Hanson and Robert Yowell, Tom Stansell, Lt. Dominic Alcocer "A Portable UWB to GPS Emission Simulator," Proceedings ION National Technical Meeting, Monterey, CA, Jan 2004.
36. G. H. Wang, V. S. Lin, T. Fan, K. P. Maine, P. A. Dafesh "Study of Signal Combining Methodologies for GPS III's Flexible Navigation Payload," Proceedings ION GPS 2004, September 2004.
37. V. S. Lin, P. A. Dafesh, A. Wu and C. R. Cahn, "Study of the Impact of False Lock Points in Subcarrier Modulated Ranging Signals and Recommended Mitigation Approaches," Proc. 58'th Annual Meeting of the ION, Albuquerque, NM, June 2003.
38. 1st Lt Bryan M. Titus, Kristine P. Maine, Thomas A. Stansell, Jr, Philip Dafesh and Robert Wong, "Assessing Ultra Wideband (UWB) Interference to GPS Receivers", Proceedings ION GPS 2002, September 2002.
39. P. A. Dafesh, J. K. Holmes, C. R. Cahn and T. Stansell, "Description and Analysis of Time-Multiplexed M-Code Data," Proceedings of the 58'th Annual Meeting of the ION, Albuquerque, NM, June 2002.

40. P. A. Dafesh, R. L. Wong, M. D. Partridge and T. Fan, "Compatibility of Galileo Modulation Options with Commercial GPS Receivers", Proceedings of the 2002 Global Navigation Satellite System Conference, May 2002.
41. P. A. Dafesh, R.T. Bow, M. D. Partridge and T. Fan, "Simulation and Hardware Demonstration of New L2 Civilian GPS Ranging Codes," Proceedings ION National Technical Meeting, San Diego, Jan 2002.
42. M. D. Partridge and P. A. Dafesh, "Code Power Measurement Methodology for GPS Block IIR-M and IIF On-orbit Test Procedures," Proceedings ION GPS 2001, Salt Lake City, UT, Sept. 2001.
43. J.K. Holmes, P. Dafesh, " Matched Filter Mean Acquisition Time Performance For P(Y), BOC(10,5), and MAN(10) Codes with FFT Aiding and NC Adding," Proceedings of the 57'th Annual Meeting of the ION, Albuquerque, June 2001.
44. P. A. Dafesh, R. L. Wong, M. D. Partridge and T. Fan, "Measurements of GPS Receiver Compatibility with Interplex-Modulated M-code Signals," Proceedings of the 57'th Annual Meeting of the ION, Albuquerque, NM, June, 2001.
45. P. A. Dafesh and T. Fan, "A Novel Approach to Enhancing the Sensitivity of C/A Code GPS Receivers," Proceedings of the 57'th Annual Meeting of the ION, Albuquerque, NM, June 2001.
46. P. A. Dafesh, L. Cooper and M. Partridge, "Compatibility of the Interplex Modulation Method with C/A and P(Y) code Signals," Proceedings ION GPS 2000, Salt Lake City, UT, Sept. 2000. **(Received Best Presentation Award)**
47. P.A. Dafesh and J. K. Holmes, "Practical and Theoretical Tradeoffs of Active Parallel Correlator and Passive Matched Filter Acquisition Implementations," Proceedings IAIN/ION Meeting, San Diego, CA, June 2000.
48. P. A. Dafesh and A. S. Parker, "Impact of Transmitter and Receiver Filtering on the Code Tracking Performance of GPS Modernization Signals," Proceedings ION National Technical Meeting, San Diego, CA, Jan 2000.
49. P. A. Dafesh, "Quadrature Product Subcarrier Modulation," Proceedings of the IEEE Aerospace Conference, March 1999.
50. P. A. Dafesh, T. M. Nguyen and S. Lazar, "Coherent Adaptive Subcarrier Modulation (CASM) for GPS Modernization," Proc. ION National Technical Meeting, Jan. 1999.
51. P. A. Dafesh, A. Parker, J. K. Holmes, and S. H. Raghavan, "Simulation of the Code Tracking Performance of Square-Wave Modulated Ranging Codes," Proc. ION GPS-98, Sept. 1998.
52. P. A. Dafesh, "Photoreflectance Modulation Spectroscopy of Semiconductor Superlattices," UCLA Ph.D. Dissertation, 1993.

53. R. Lacoë, D. Gutierrez, W. Bloss, M. O'Loughlin, P. Dafesh, R. Cole and M. Isaac, "Quantum Well Infrared Photodetectors with Graded Barriers and Operation at Long Wavelengths," Proceedings of the IRIS Specialty Group Meetings on Infrared Detectors, 1, 151, 1993.
54. P. A. Dafesh and K. L. Wang, "Temperature Dependence of the E_0 Transitions in Bulk Ge and a Ge-rich Si_mGe_n Superlattice," Physical Review, B45, 1712, 1992.
55. P. A. Dafesh, "Characterization of GaAs/Al_xGa_{1-x}As Multiple Quantum Well Infrared Detector Structures Using Photoreflectance," J. Appl. Phys., 71, 5154, 1992.
56. K. D. Bell, P. A. Dafesh, L. A. Hsu and A. S. Tsuda, Cost/Engineering Modeling to Support Rapid Concept Development of an Advanced Infrared Satellite System," Proceedings of the SPIE Conference on Satellite Remote Sensing II, 2583, 495, 1995.
57. P. A. Dafesh, Y. Dotan, R. Russell and Stan Kohn, "Array Performance Validation of An MWIR Band MSX Flight Array," Proceedings of the IRIS Specialty Group Meeting on Infrared Detectors, 2, 75, 1994.
58. P. A. Dafesh, "Photoreflectance Modulation Spectroscopy of Semiconductor Superlattices," UCLA Ph.D. Dissertation, 1993.
59. P. A. Dafesh, V. A. Arbet-Engels, P. M. Adams and K. L. Wang, "Thermal Stability of the Structural and Electronic Properties of Strain-Symmetrized Si_mGe_n Superlattices and Ungraded, Nearly Relaxed $\text{Si}_x\text{Ge}_{1-x}$," Proceedings of the Materials Research Society Symposium, 281, 439, 1993.
60. P. A. Dafesh, "Characterization of GaAs/Al_xGa_{1-x}As Multiple Quantum Well Infrared Detector Structures Using Photoreflectance," J. Appl. Phys., 71, 5154, 1992.
61. P. A. Dafesh, V. Arbet and K. L. Wang, "Electronic Transitions in a Ge-rich Strain-Symmetrized $\text{Si}_8\text{Ge}_{32}$ Superlattice Measured by Photoreflectance Spectroscopy," Proc. SPIE International Conference on Modulation Spectroscopy, 1286, 308, 1990.
62. P. A. Dafesh, "Investigation of the Electronic Transitions in Si_mGe_n Superlattices and GaAs-Al_xGa_{1-x}As Multiple Quantum Wells Using Photoreflectance Spectroscopy," UCLA Masters Thesis, 1990.
63. P. A. Dafesh, V. Arbet and K. L. Wang, "Electronic Transitions in a Si_mGe_n Strained Monolayer Superlattice Measured by Photoreflectance," Appl. Phys. Lett., 56, 1498, 1990.
64. R. C. Bowman, Jr., P. M. Adams, J. F. Knudsen, S. C. Moss, P. A. Dafesh, D. D. Smith, M. H. Herman and I. D. Ward., "Effects of Helium Ion Implantation on the Optical and Crystal Properties of GaAs," Proceedings of the Material Research Society Symposium, 147, 303, 1989.