

Resume
Paul E. Gartz
Boeing Associate Technical Fellow

Paul is experienced in large-scale and complex systems architecture, design and analysis as well as large-scale, company-level process definition and integration. He has commercial, defense and private business experience. His key discipline is systems engineering and integration with sub-disciplines in business, executive decision analysis, avionics, crew interfaces, marketing and safety/failure analysis. He is educated in these fields and psychology at the graduate level.

His interests are leading innovative projects and processes that "make a difference"...where his vision and initiative can be put in service using his strategic, architectural/design, technical, project management and "working together" skills to help implement local and large-scale results with teams.

1/03 - Boeing Phantom Works Systems-of-Systems Research Assignment

Paul is currently a "Systems-of-Systems" (SoS) architect in Boeing's corporate research arm, Phantom Works. The group develops "Network Centric" Systems-of-Systems concepts (the use of information as an enabler to integrate major aerospace products aka systems such as airplanes, satellites and ground facilities into even larger so-called systems-of-systems) that improve the overall operability of the world's commercial transportation systems and infrastructure. His specific assignment is: Architect, Commercial Logistics SoS, a system reliant upon new Intermodal Traffic Management System (ITM - ground, sea and air interoperability), to globally move materiel, people and information more rapidly, efficiently, effectively and safely. He is responsible for the technical architectures and business cases.

11/98 - 12/02 BCA* Process Management Research & Staff Assignment

Paul took a special assignment to transfer the discipline of systems engineering to the Boeing-wide goal to become a process-managed company. Assignments included: development of the theoretical foundations of Process Management; definition of a company's RAA structure (Responsibility/Accountability/Authority) for the new Boeing management matrix; the development and planning to deploy a new, Boeing-wide "Process Discipline" to provide Boeing's capability and capacity of people's skills, knowledge, methods and tools to manage by processes and achieve Boeing common practices and skills. With his partner he obtained the support of BCA and Boeing CTOs for this discipline. His theory was presented to the Boeing Technical Fellowship members, Boeing's Engineering leaders and was accepted in a peer-reviewed management journal as a new industry concept for managing businesses.

6/98 - 11/98 17th DASC Conference Chairmanship Special Assignment

Paul was General Chairman of the IEEE/AIAA/SAE sponsored "DASC" conference on avionics and large-scale systems. He used the conference as an opportunity to validate the conference sponsor's vision (IEEE AESS Board of Governors), which he also led. He transformed the conference market, created three business units and introduced a large number of innovations and new processes. It had record attendance and business and technical success.

9/96 - 5/98 Boeing AIS (aka Connexions) Program Assignment

Paul was a key member of the team that created what is now Boeing Connexions, Boeing's first major service business and a new System-of Systems. His assignments were many. He was overall airplane architect, leader and integrator of the Marketing/Engineering/Business Team, which he got created, developer of the many of the team's technical and integration processes

and leader of airplane systems engineering. He introduced the concepts of executive decision analysis, which dramatically speeded decisions and saved millions. He was the organization's technical representative for assessing the purchase of new businesses.

1/93 - 8/96 BCA* Systems Engineering

Staff Assignment

Paul was a member and leader in BCA's newly reorganized systems engineering organization. He continued to introduce into mainstream BCA the methods his teams pioneered on the 777 and earlier programs. One key output was a BCA preferred processes for systems engineering that has been taught for years to the industry. He was a senior member of BCA's first efforts to bring executive decision analysis to decision-making, and he integrated these concepts into a systems development process. He was selected leader of the BCA effort to develop what is considered the definitive Boeing course on airplane systems and personally authored four of the six course parts. The course was sponsored by the Director, BCA Asian Marketing and successfully used to obtain high-value Asian business benefits.

2/89 - 12/92 BCA* and 777 Systems Engineering

Staff & Program Assignment

Following the completion of his 747-400 responsibilities in 1989 Paul was the architect of a revolutionary concept to internally integrate engineering work and create common datasets (intellectual capital) with the downstream customer service organizations. He secured the support of multiple, cross-functional vice presidents to fund an initiative called "DIET" (Design Integration and Electronic Transfers) to incorporate a decade of airplane systems lessons learned into what became the 777. This included the requirements, design and safety structure of all airplane systems development, and IS integration architecture of processes, methods, tools and the creation of common engineering datasets. DIET resulted in new engineering deliverables including requirements, architecture and safety standards for all engineering organizations and significant changes in the technical working together relationships between BCA, the FAA/JAA, Boeing's suppliers and Customer Services. By plan he piloted the concepts on the 747-400 Freighter and then set up teams with 777 organizations to assure technology transfer. Multi-million dollar savings resulted and many permanent process changes. He now teaches these principles in his industry courses.

10/87 - 1/89 BCAG* 747-400 Avionics

Program Assignment

Paul was requested to technically lead the avionics systems engineering group and prepare the organization for FAA "systems-level certification" (as opposed to subsystem level). There was great concern among the FAA and Boeing managers about passing certification. Paul expanded the processes, deliverables and integration from his 757/767/7J7 groups to all avionics subsystems into an overall systems architecture definition and failure/safety analysis program. The FAA commented that the result was unlike what they had ever seen from BCA and it made their job easier. This was the "proving ground" for the later 777 systems engineering processes.

9/82 - 9/87 BCAG* Avionics Systems Eng

Research & Staff Assignment

The 757/767 executive lessons learned required the establishment of new BCA systems and software engineering functions. Paul was selected to technically lead BCAG's first systems engineering staff and research group. Paul introduced new industry methods, tools and standards called "Structured Methods" that were taught to Boeing's new 7J7 program and over 1000 managers, engineers and suppliers industry-wide. He was also selected organize a major Boeing course on these 757/767 systems that was requested by Boeing's chairman with intent to capture and teach Modern Digital Systems Design. Paul wrote the systems engineering modules. To people in 1985 Paul proposed the creation of a Boeing technical fellowship.

3/80 - 8/82 BCAG* 757/767 Flight Management System

Program Assignment

Paul technically led BCAG's first systems engineering program group. The FAA was concerned about the large increase in integration of systems enabled by digital avionics. Paul reverse-

engineered an overall avionics architecture and pioneered new methods of systems engineering and failure analyses that helped assure certification. This work later led to integrated systems engineering processes deployed on the 777.

10/74 - 2/80 Variety of Assignments

Paul held a variety of assignments in the sales, training and marketing industries as well as running his own architectural design and renovation business of vintage Victorian homes.

6/69 - 9/74 Bell Labs Technical and Marketing

Program Assignments

Paul was one of the youngest lead engineers on the Army's SAFEGUARD antiballistic missile program. SAFEGUARD was the first design and deployment of such a large-scale, complex system worldwide. He had overall responsibility for radar and data processing system traffic design. He was an executive assignee on AT&T's PICTUREPHONE© program where he developed new marketing concepts.

Industry Leadership, Professional Associations, Awards and Personal

Paul is the BCA representative to Boeing World Headquarters' Boeing-IEEE Interface Team and a member of the Walla Walla University Dean's Advisory Board.

He has chaired multiple international conferences, is the former president of the SDF, Inc, a professional society for systems/software engineers he helped found, is a founding member of INCOSE (International Council on Systems Engineering) and a former technical board member, is an AIAA Associate Fellow (American Institute of Aeronautics and Astronautics), senior member of IEEE (Institute of Electrical and Electronic Engineers) and member of SAE (Society of Automotive Engineers).

He is a 1986 Boeing EXPO (EXecutive POTential program), a former Bell Labs Fellow at Stanford, a recipient of industry and Boeing awards for technical excellence and leadership including the IEEE Harry Rowe Mimno Award for his 1980-82 work on the Boeing 757/767 airplanes. He has authored over twenty industry papers and has delivered over one thousand lectures and presentations. He was the IEEE Distinguished Lecturer to India in 1997 and stimulated the creation of India's first systems engineering degreed program at the Indian Institute of Technology in Mumbai (Bombay), India.

Paul has raised two step-children, whom he loves deeply, and enjoys kids, skiing, boating, travel, architectural design and a variety of hobbies.

IEEE Leadership and Awards

IEEE Membership	Senior Member, #05878103
Current Position:	Executive VP/President-Elect, Aerospace and Electronics Systems Society (AESS) Board of Governors (BoG); 2002-
IEEE Positions:	Chairman, AESS BoG Strategy Committee; 1996-Present Chairman, AESS Large-scale Systems and Systems Engineering Panel Governor, AESS BoG, 1996-2002 General Chairman, IEEE 17 th Digital Avionics Systems Conference, 1998 Chairman, Systems Engineering Track, Digital Avionics Systems Conferences, 1986-1997
Related Positions:	Boeing's IEEE-Boeing Strategic Relationship Committee; 2002-Present
IEEE Awards:	IEEE AESS Harry Rowe Mimno Award for Boeing 757/767 methods development IEEE Distinguished Lecturer in Systems Engineering and Large-scale systems, 1997-Present

Recognition from India IEEE Distinguished Lecturer trip for stimulating the creation of India's first systems engineering degreed program at the Indian Institute of Technology, Mumbai (Bombay), 1997.

Education

BSEE Economics Minor; Illinois Institute of Technology, 1969
MSEE Majors: Systems, Communications, Computers; Stanford University, 1970
Post-graduate Work on marketing MBA (1973-4); Executive Decision Analysis, Stanford 1995;
clinical psychotherapy certificated in Radix level 1, 1981; a number of postgraduate technical, liberal arts, industry and Boeing internal courses.
Honors Eta Kappa Nu Honorary (including presidency), Tau Beta Pi Honorary

Contact Information

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*BCA(G) = Boeing Commercial Airplanes (Group)