BACKGROUND:

Raytheon -- June 1999 to Present

Principle Systems Engineer

Most recent assignment:

Systems Engineering Process Development and Deployment

C^3I Air Defense Systems Pre-proposal Activities

Boeing -- September 1985 to June 1999

Software Engineer *and* part time Systems Engineer

Specializing in Real-time Embedded System Design & C/Ada Implementation.

Last Major Assignment:

Team Leader for both Systems and Software Requirements as well as Software Architectural Design, and then Software Developer for Detailed Design, Code and Test on a Satellite Sensor Payload System

Other areas of competence . . .

Systems Engineering for Satellite Ground Systems
Software Project Team Leader
Architectural Designer using Real-time and Object-Oriented Methodologies for Software Engineering
Requirements Analyst for both System level and Software level requirements
Object-oriented Simulation Design & Implementation.
Design Methodology Research & Tool Development.
Practitioner using Formal Requirements Methods for Systems and Software Engineering
Software Process and Systems Process Consultant and Technologist
Formal Requirements Methods Research & Technology Transfer.
Human Interface Software Design & Prototyping.
Former Software Engineering Process Group Chairman, Process Assessor and Change Agent.
Lead in Software and Systems Engineering Process, Methods and Tools development and implementation.
Technology Transfer Specialist.

Creative Micro Systems -- February 1984 to June 85
Computer Manufacturer
Lead Software Engineer / Project Manager
Principal designer on a 12,000-line real-time system written in Assembly code.

ATV Systems -- January 1983 to January 84
Computer Manufacturer of Restaurant Point-of-Sale and Hotel Front-Desk Systems
Systems Analyst
New product development for hospital industry.

Word Management Systems -- 1979 to 81
Word Processing Bureau -- Norwich, England
Managing Partner (Part-time student)

London School of Economics -- 1973 to 79 and 82
Full-time graduate student
Ph.D. degree obtained 1982
Subject: Philosophy of Science

Dissertation Title:
The Structure of Theoretical Systems in Relation to Emergence.
Dissertation analyzed the impact of new things coming into existence on the structure of scientific theories.

University of Kansas -- 1969 to 73
Full-time undergraduate student
B.Sc. degree obtained 1973

Contact:

Kent D. Palmer

P.O. Box 1632, Orange CA, 92856-1632

voicemail:(714)633-9508 email:palmer@exo.com

More information at: http://server.snni.com:80/~palmer/resume.html

Personal Data:
- U.S. Citizen. Clearance.
- Will consider relocation.
- References will be supplied upon request.

SYSTEMS ENGINEERING:

❍ Systems Lead on Satellite Payload Processor

Organized Systems Engineering effort on major project.

Collected issues and analyzed their project impact. ❑ Facilitated cross discipline resolution of issues on project. ❑ Advocated model building at Systems Engineering level. ❑ Brought focus to areas of concern. ❑ Forced changes in specifications in order to improve Systems Engineering discipline on the project. ■

❍ Systems Process Methods and Tool Research

Have been practicing Systems Engineering based on recent research into Systems Processes, Methods and Tools attempting to put these improvements into practice by example use.

Solid Theoretical Background in Systems Theory ❑ Developed and deployed Systems Engineering Processes ❑ Research in Formal Requirements Methods at Science Center ❑ Focus on integrating Software and Systems Capabilities ❑ Applied Systems Engineering Processes and Methods to Research Prototypes under development. ■

SOFTWARE ENGINEERING:

❍ Software Requirements, Architectural Design and Implementation of Satellite Sensor Payload System:

System has two PowerPC processors and 40 C40 Digital Signal Processors and contains Five CSCIs.

Helped setup processes, methods and tools for project. ❑ Collected software requirements and wrote SRS. ❑ Produced Behavioral Model of system using Gurevich Abstract State Machines Method. ❑ Produced DARTS Tasking Architecture and wrote SDD. ❑ Produced ObjecTime model of application. ❑ Represented Software Team at Systems Engineering meetings. ❑ Coordinated with hardware designers. ❑ Supervised update and coordination of all Software Design models. ❑ Worked to apply latest technology, methods and processes to project to achieve maximum efficiency ❑ Produced module designs ❑ Wrote and tested C code for a significant part of the payload system using VXworks Tornado. ■

❍ Simulation Development:

Knowledge of object-oriented discrete event and continuous system dynamic simulation systems.

Wrote simulation with dynamically programmable attributes that modeled multiple vehicle interaction scenarios. ❑ Designed simulation to drive multiple interactive console displays, keeping information coherent across operator positions. ❑ Simulator written in MODSIM object-oriented, graphical simulation language. ❑ Multiple simulation programs communicating through Unix sockets to user interfaces written in X Windows. ❑ Sensor subsystems emulated and vehicle design prototyped. ❑ Invocation of Object methods in another program across the network. ❑ Event management through global postoffice where objects register for events. ❑ Continuous simulation facilities built into discrete event simulator. ■

❍ Implementation Experience:

Industrial experience in higher level programming.

Designed and implemented Cache in Ada code for large Database project. ❑ Compared, selected and used Ada compiler and Run-time kernels. ❑ Wrote Ada tasking design descriptions. ❑ Retargeted C prototypes into Ada. ❑ Developed and implemented object-oriented designs using Ada. ❑ Familiarity with C++ and Java. ■

❍ Human Interface Design:

Skilled in use of User Interface Management Systems.

Created expert system user interface. ❑ Researched UIMS for real-time systems. ❑ Prototyped user interfaces in various languages. ❑ Developed layered display architecture. ❑ Designed object-oriented prototyping tool. ❑ Prototyped hypertext diagnostic system. ■

❍ Software Reuse:

Adept in Software Reuse Technology.

Developed software reuse plans. ❑ Performed Domain analysis. ❑ Set up reuse library. ❑ Researched design reuse methods. ❑ Developed feasible reuse process. ❑ Constructed reusable parts. ❑ Used SPC Synthesis methodology. ■

SOFTWARE TECHNOLOGY:

❍ Requirements Methods:

Research into Formal and Semi-formal Methods.

SPC CoRE, Software Cost Reduction, Parnas' Four Variable Method, Gurevich Abstract State Machine Method, N. Leveson's RSML, Statemate, SRI's Prototype Verification System, Z, VDM, RAISE ■

❍ Real-time Design Methodologies:

In-depth experience using many methods in design work.

Architectural and detailed software design. ❑ Programming-in-the-large and Information-hiding. ❑ Distributed & Tasking-communication design. ❑ Object-oriented & Functional design. ❑ Real-time Operating Systems. ■ Some specific methods: UML ■ Objectime/ ROOM ■ Octopus Real-time Object Oriented Design Method ■ SPC / Gomaa - ADARTS ■ Neilsen / Shumate - OOD/VLM ■ Constantine / Wasserman - OOSD ■ Shlaer / Mellor - Object Oriented Analysis ■ Yourdon / DeMarco- Structured Analysis / Design ■ Hatley / Pirbhai real-time extensions ■ Ward / Mellor real-time extensions ■ Gutag / Liskov - Object Oriented Design ■ Entity-relationship modeling & temporal logic ■ Object Modeling Technique ■

❍ Software Work Process Implementation:

Put in place a complete software process for development.

Chairman of division's Software Engineering Process Group (SEPG). ❑ Created conceptual framework for process improvement activities of the division. ❑ Defined and implemented software processes. ❑ Delineated Division's software procedures. ❑ Developed process and product metrics. ❑ Designed information collection methods. ❑ Assessed projects using SEI process Capability Maturity Model and questionnaire. ❑ Developed ADARTS based process for Design. ❑ Instituted use of Architectural Design Plans. ❑ Wrote Systems Engineering work process based on MIL-STD-499B. ■

❍ Cost Estimation Parametrics:

Estimated software size, effort & schedule for bids.

Built historical productivity database. ❑ Calibrated SOFTCOST model. ❑ Created custom in-house models based on regression and COCOMO parameters. ❑ Coordinated cost model comparisons. ❑ Applied models to make bids in proposal efforts. ❑ Created work breakdown structure models. ❑ Made cost and schedule estimates. ❑ Analyzed engineering bids, and compared them to model results to identify cost drivers. ■

❍ Environment Building:

Constructed a unified environment for development.

Evaluated Computer Aided Software Engineering tools. ❑ Integrated software design environment. ❑ Planned technological insertion of environmental capabilities. ❑ Trained Software Engineers on tools and methods, and developed associated documentation. ■ [000421]

ESSENTIAL SKILLS:

- ❖ Real-time embedded software systems design, prototyping and implementation.
- ❖ Object-oriented simulation design and development.
- ❖ Software and systems engineering process definition.
- ❖ Engineering-wide work process architecture development.
- ❖ Research into Systems Engineering and Software Engineering Processes, Methods, and Tools.
- ❖ Research into Formal Requirements Methods.
- ❖ Research into Design Methodologies.
- ❖ Project planning and project leadership.
- ❖ Development of software engineering technology applications such as CASE tool design and prototyping and environmental integration.
- ❖ Trained at Software Engineering Institute to perform audits of software development process execution.
- ❖ Performed audits of division software process using Capability Maturity Model (CMM) according to SEI assessment methodology.
- ❖ Studies of methodological issues such as the application of the object-oriented methodology to the analysis and design of real-time systems.
- ❖ Development and maintenance of databases and models for productivity and quality analysis.
- ❖ Research into use of new technologies, technology infusion and transfer to early adopters.
- ❖ Principal evaluator for many engineering tools.
- ❖ Planning and execution of technology enhancement programs.
- ❖ Contact for technology transfer from aerospace consortia, e.g. SPC, SEI and SPIN.

ARTICLES WRITTEN:

- ❑ "Integration of Methods in Software Architectural Design: Towards the Definition of a Core Set of Real-time Design Methods" (SES II & CASE88)
- ❑ "Software Engineering Foundations: A Paradigm for Understanding Software Design Methods" (SES III)
  - ❑ Part 1: Software Ontology
  - ❑ Part 2: Software Systems Meta-methodology (SES IV)
  - ❑ Part 3: Integral Software Engineering Methodology (SES V)
- ❑ "The Future of Software Process" (SES V)
- ❑ "Software Engineering Design Methodologies and General Systems Theory" International Journal of General Systems - Vol. 24, No. 1-2, 1996, pp. 43-94
- ❑ "On the Social Construction of Emergent Worlds" Series of working papers.
- ❑ "Steps to the Threshold of the Social" (SES VI) Series of working papers.
- ❑ "Advanced Process Architectures" Tutorial SEPG National Convention 1995.
- ❑ "Meta-Systems Engineering" Tutorial for Principles Working Group INCOSE 1997.
- ❑ "Reflexive Autopoietic Dissipative Special Systems Theory" 1999.
- ❑ "Meta-Systems Engineering" INCOSE 2000.
- ❑ "Gurevich Abstract State Machines in Theory and Practice" 2000.

QUOTES: Managers' written remarks on some performance reviews:

"Kent has displayed an unusual strength in researching and developing ideas into workable and viable improvements in the software development process. This year, as the technical lead of the Software Technology Evolution Project, he has displayed outstanding creativity in creating the software design review model and demonstration of a new state of the practice in computer-aided software engineering environment for the department. Kent is a very valuable asset to the corporation and most certainly earned this merit increase." 1987

"Mr. Palmer's performance of his duties continue to be exceptional. He has a superior ability to research a technology and succinctly state the applicable domain in an understandable way. This year he prepared and delivered a paper to the company Software Engineering Symposium and the ACM CASE88 conference on a fundamental aspect evaluating any software engineering methodology. He has received accolades from various industry leaders as a result of this paper. His performance is a significant image builder to the company. He most certainly deserves this promotion." 1988

"Kent continues to display his broad and vast knowledge and problem-solving skills for the department. He has the unique capability of defining new technical directions of the department, partially because of his knowledge, partially because of his ability to do library research, partially because of his dedication and attitude, and partially because of his ability to select the important data from a large quantity of extraneous data. He is a very valuable employee and most assuredly deserves this raise." 1989

"Mr. Palmer has performed independent research on design methodologies and completed a draft of a paper on software design meta-methodologies. He was primary contributor to the interdivisional SEPG process manual. Mr. Palmer also initiated the transfer of entity-relationship (GERM) and distributed system modeling (VERDI) tools technology from MCC. Mr. Palmer designed and prototyped user interfaces for the Fault Correction Assistant expert system, researched and acquired a User Interface Management System (UIMS) tool for command and control system display development, and researched formal methods for specifying architecture and interfaces in the Reference Command System." 1990

"Dr. Kent Palmer is currently on the Advanced Technology Team. During the last year, Mr. Palmer has made significant contributions to his assigned projects. He has become an authority in the area of software system conceptualization and design. He has been responsible for solving multiple interrelated problems requiring original solution. His performance has been excellent. For these reasons, I recommend that Dr. Palmer be promoted to the next higher engineering staff level." 1990

"During this review period, Dr. Palmer was a member of the Systems Design and Development Laboratory working on analysis of object-oriented software, software reuse, and vehicle simulation software. He contributed significantly to the IR&D project planning. He has also played an important role in the software process working group." 1991

"Dr. Palmer is currently leading the Division Software Process development efforts. In this assignment, he leads a team of Division engineers as well as coordinating with other divisions to provide process consistency. He has also led the efforts for SEI assessment of the Division's software development status. This increase is in recognition of his continued professional leadership in these key Division process efforts." 1992

"Mr. Palmer is a full-time member of the Software Engineering Process Group (SEPG). He provides process consulting to various projects, helps maintain and update process support materials, researches software process issues, and serves as the Division representative to the UCI IRUS SPIN. Mr. Palmer performs all his assignments in an excellent manner and is well deserving of this merit increase." 1995

"Kent brings a wealth of process experience to bear on his current activities. His direct experience on large strategic programs, before he joined us, serves as a source of in-sight and good ideas in trying to move our practices towards a system approach. He is able to balance the complementary but different SE and software process approaches. He did independent research into project engineering notebooks as well as the organizational technical library to understand current SE practices and templates. He drafted an SE process guideline and SE reporting template for dissemination to lead System Engineers. Kent works well in a team environment. Listens well, deals with information effectively and always seeks to bring in new information, approaches and viewpoints." 2000

Are you looking for someone who is both an experienced real-time <u>systems engineer</u> & <u>software engineer</u> that specializes in the application of NEW PROCESSES, NEW METHODS and NEW TECHNOLOGIES to the software system development environment within your organization?

Perhaps this is the resume you've been looking for . . .

Kent D. Palmer

Systems Engineer, Software Engineer & Technologist

"My objective is to find a position of responsibility implementing new technologies within the system engineering and software engineering development process, then to <u>use</u> these technologies to increase productivity and improve system and software quality. The proper use of tools in the development of real-time systems requires a knowledge of process, methods, standards and metrics, combined with development experience. I have a broad range of experience to offer any engineering organization interested in enhancing its real-time embedded technology capability as a way to increase its competitiveness."