INCOSE

International Council on Systems Engineering

Avenue of the Saints Conference on Systems Engineering

March 11 – 12, 2003 • 8:00 a.m. to 5:00 p.m.
Cedar Rapids, Iowa

Brought to you by INCOSE Heartland Chapter in conjunction with
INCOSE Midwest Gateway and North Star Chapters

Sponsored by Rockwell Collins

Welcome to the 2003 INCOSE Avenue of the Saints (AoS) Conference on Systems Engineering

INCOSE AVENUE OF THE SAINTS CONFERENCE ON SYSTEMS ENGINEERING
MARCH 11-12, 2003
CEDAR RAPIDS, IOWA (USA)

Welcome to the 2003 INCOSE Avenue of the Saints (AoS) Conference on Systems Engineering.

The Heartland, Midwest Gateway and North Star Chapters of INCOSE, are proud to present the inaugural INCOSE AoS Conference on Systems Engineering. The mission of 2003 AoS Conference is to foster the definition, understanding and practice of world-class systems engineering in industry, academia and government. We hope you enjoy the educational opportunities in engineering project management, system requirements analysis and design, and integration, verification, and validation, as well as the open forum to network with other system engineering professionals.

We have arranged numerous tutorials encompassing the full life-cycle of system engineering development. Included in this years tutorial listing, are tutorials addressing concept development in the "Joint Tactical Radio System (JTRS)" tutorial, project pursuit opportunities in "Target Costing" and "Pursuit and Order Capture: Winning Solutions" tutorials, engineering development in "Managing Application Development Projects Using the Microsoft Solutions Framework" and "The Past, Present, and Future of Structured Analysis", and manufacturing with "Lean Overview and Enterprise Simulation".

After a hard day of tutorials, we can look forward to a relaxing banquet and exciting guest speakers, Mr. Rod Blocksome and Mr. Tom Vinson, to talk about "The Search for Earhart's Plane" which is being sponsored by Nauticos and as seen on National Geographic. The presentation is a demonstration of the use of classic system engineering to determine the possible location of her plane and the technical obstacles still to be overcome.

The second day of the conference will kick-off with our invited Keynote Speaker, Jerome J. Gasper, Senior Vice President, Engineering and Technology for Rockwell Collins. After which the day will consist of three fast-paced simultaneous system engineering tracks with presentations on System Engineering Metrics, Management, Requirements Analysis and Design, Verification and Validation, Processes and Tools. Also arranged for this day is an exhibit area where exhibitors and sponsors will demonstrate "The best of the best", and an off-site escorted tour of the facilities and capabilities of Rockwell Collins.

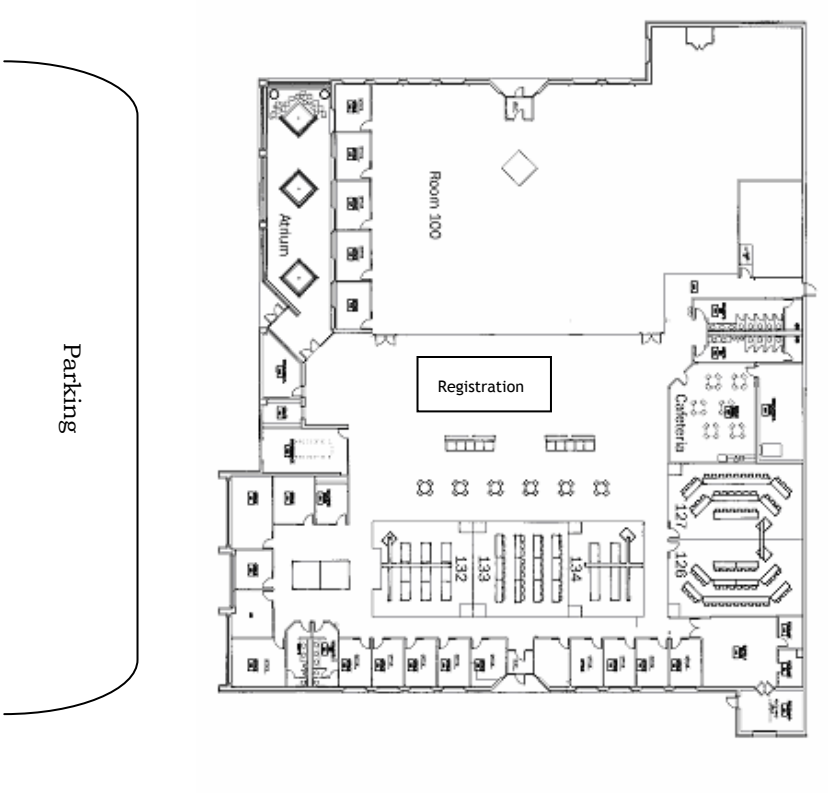
We have a great location at Kirkwood's Training and Outreach Center (KTOS) for our opening 2003 AoS Conference. Our chapter volunteers have arranged a great banquet, fine lunches, and many chances to network with peer system engineers, please take the time to thank our dedicated volunteers, the KTOS staff, and our Rockwell Collins sponsor during this conference.

Mr. Tony Thompson
AoS Conference Chair

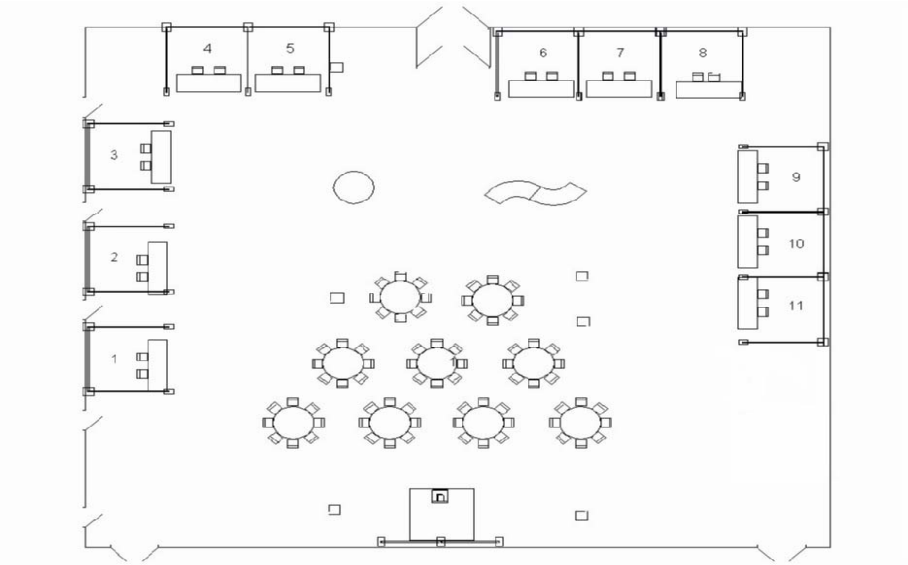
Mr. John Povacz
Technical Tutorials Chair

AoS Conference Chair	Tony Thompson	Rockwell Collins, Inc.
Technical Tutorials Chair	John Povacz	Rockwell Collins, Inc.
Technical Presentation Chair	Bruce Smith	Rockwell Collins, Inc.
Delegate Registration	Ray Jorgensen	Rockwell Collins, Inc.
Finances	Bernie Lettington	Rockwell Collins, Inc.
Marketing Chair	Terence Turnovsky	Defense Contract Management Command
Exhibit Chair	Kevin Klimes	Rockwell Collins, Inc.
Midwest Gateway Chapter Chair	Bill Bezdek	Boeing Company
	Clinton Moor	Northrop Grumman
North Star Chapter Chair	Larry Brezinski	Micro Component Technology, Inc.

Kirkwood Training & Outreach Center (KTOS)



Detail – Exhibit Center/Banquet Hall – Room 100



Exhibitors

Company	Exhibit
Artisan Software	8
Distributive Software	10
I-Logix	6
INCOSE Heartland Chapter	4
Rational	2
Rockwell Collins	1
Predicate Logic	7
Popkin Software	11
Telelogic	5
The MathWorks Inc.	9
Vitech Corp.	3

INCOSE Avenue of the Saints Conference on Systems Engineering
March 11-12, 2003
Cedar Rapids, Iowa (USA)

TUESDAY, MARCH 11 - TUTORIALS

Registration
0730 – 1630
Center Lounge

0730	Continental Breakfast - Cafeteria		
	Project Management Room 127	Lean Thinking Room 104	Target Costing Room 126
0800	T1 *Managing Application Development Projects Using the Microsoft Solutions Framework* Mr. Jeff Carter Rockwell Collins, Inc.	T3 *Lean Overview and Enterprise Simulation* Mr. John Novak Rockwell Collins, Inc.	T5 *Target Costing: Enhancing Revenues through Effective Product Development* Ms. Tami L Capperauld Ms. Janet M Horton Boeing Company
1200	Lunch – Cafeteria		
	Analysis & Design Room 127	Systems Thinking Room 133	Pursuit & Order Capture Room 126
1300	T2 *The Past, Present, and Future of Structured Analysis* Mr. Jeffrey O. Grady JOG System Engineering	T4 *Joint Tactical Radio Systems (JTRS)* Col. Steven A. MacLaird, USAF Col. Charles M. Whitehurst, USAF Mr. Kendall (Ken) Ackerman Mr. Edward J. Calhoun	T6 *Pursuit and Order Capture: Winning Solutions* Mr. Carl M Watts Rockwell Collins, Inc.
1700	Social Opening - Room 100 Music by Cedar Rapids String Quartet from Cedar Rapids Symphony		
1800	Dinner Banquet – Room 100		
1900	The Search for Earhart's Plane - Mr. Rod Blocksome and Mr. Tom Vinson		

Brought to you by INCOSE Heartland Chapter in conjunction with INCOSE Midwest Gateway and North Star Chapters

Plus See These Exhibitors and Sponsors at the EXPO (March 12)

Artisan Software

Distributive Software

I-Logix

INCOSE Heartland Chapter

Rational

Rockwell Collins, Inc.

Predicate Logic

Popkin Software

Telelogic

The MathWorks Inc.

Vitech Corp.

Avenue of the Saints Conference on Systems Engineering sponsors who are exhibiting are listed in Bold.
For Sponsor/Exhibitor news and updates, visit www.incose.org/heartld/saints_conference/aos-index.htm

INCOSE AVENUE OF THE SAINTS CONFERENCE ON SYSTEMS ENGINEERING
MARCH 11-12, 2003
CEDAR RAPIDS, IOWA (USA)

WEDNESDAY, MARCH 12 – CONFERECE & EXPO

Registration
0730 – 1630
Center Lounge

0730	Continental Breakfast - Cafeteria		
0800	Heartland Chapter Welcome to KTOS Facility - Room 100		
0815	Keynote Speaker – Mr. Jerome (Jerry) J. Gaspar - Room 100		
	Engineering Management Room 126	Integrated Verification & Validation Room 127	Systems Tools Room 133
0900	P1 *Experiences With Outsourcing Software Development* Mr. Jeff Carter Rockwell Collins, Inc.	P2 *National Driving Simulator Lab* Dr. L.D. Chen Dr. Yiannis Papelis NADS & Simulation Center University of Iowa	V1 *Model-based Systems Engineering* Dr. Hans-Peter Hoffmann I-Logix, Inc
1000	P3 *Measurement within the CMMI* Mr. Pete Baxter Distributive Software INCOSE Measurement Working Group (MWG) Chairmen	P4 *Integration of Program Performance Through Network Logic Modeling* Mr. Keith D. Hornbacher Hornbacher Associates	V2 *Eclipse* Mr. Joel Pech Rational Software Corporation
1100	Networking Break * Visit the Vendor EXPO Area – Room 100		
1130	P5 *In risk management, it's the behavior, stupid!* Mr. Art Gemmer Rockwell Collins, Inc.	P6 *Language Extensions for Modeling Executable Specifications to Validate System Requirements* Nasib Naser, Ph.D. Synopsys, Inc.	V3 *Rose Realtime* Mr. Joel Pech Rational Software Corporation
1230	Lunch – Room 100		
	Analysis & Design Room 126	Engineering Process Room 127	Systems Tools Room 133
1330	P7 *UML What's In It For Me?* Mr. Jorge Buenfil Rockwell Collins, Inc.	P8 *Knowledge Management* Lynette Freese Rockwell Collins, Inc.	V4 *CORE* Ms. Jody Fluhr Vitech Corp.
1430	P9 *Tooling-up a Top Level Requirements Document* Mr. Tony May Rockwell Collins, Inc.	P10 *Technical Consistent Process* Mr. Richard Bennett Rockwell Collins, Inc.	V5 *Measurement Protocols* Mr. James Lawler TychoMetrics - Predicate Logic
1530	Networking Break * Visit the Vendor EXPO Area – Room 100		
1600	P11 *System Level Design for DSPs and FPGAs* Mr. Leopold Lee Mr. Michael A. Esposito The MathWorks Inc	P12 *Starting a Project Right: A Successful Requirements Gathering Methodology* Ms. Dawn Ainger-DeBoer Computing Solutions	*V6 Tau/Architect* Mr. Jim Cook Telelogic
1700	Wrap-Up		
1800	Evening Event - INCOSE Chapters BOD Sharing Meeting – Room 104		

Sponsor and Vendor EXPO 0900 - 1800 Room 100
Rockwell Collins Tour 1100 - 1330

Brought to you by INCOSE Heartland Chapter in conjunction with INCOSE Midwest Gateway and North Star Chapters

"SYSTEMS LEVERAGE OF KNOWLEDGE MANAGEMENT" - KEYNOTE SPEAKER

Jerome (Jerry) J. Gaspar
Senior Vice President, Engineering and Technology
Rockwell Collins

INCOSE AVENUE OF THE SAINTS CONFERENCE ON SYSTEMS ENGINEERING
MARCH 11-12, 2003
CEDAR RAPIDS, IOWA (USA)

Systems Leverage of Knowledge Management addresses the challenges and solutions of aerospace systems knowledge extension and leverage in a consolidating, highly competitive, yet collaborative environment.

Jerome (Jerry) J. Gaspar is Senior Vice President, Engineering and Technology of Rockwell Collins and is also a corporate officer. Gaspar is responsible for Rockwell Collins' Engineering and Technology organization, including the Advanced Technology Center, the Displays Center and the Engineering Services Center. He was appointed to the position in June 2001. He is also the Core Process owner for enterprise-wide Design & Development implementation.

A native of Bridgewater, South Dakota, Gaspar earned a Bachelor of Science degree in Electrical Engineering from South Dakota State University. He earned a Master of Business Administration degree from the University of Iowa. Gaspar is a member of the Industrial Advisory Board of Sandia National Laboratories in Albuquerque, New Mexico. He is also a member of the Product Development and Management Association and the Project Management Institute. He serves several local charities, and is a licensed pilot. Jerry is married and has two adult children.

ROCKWELL COLLINS TOUR
An industry leader for nearly 70 years
Limited to the first 35 registrations
Wednesday, March 12, 2003 11:00 a.m. - 12:30 p.m.

No registration will be available at the Conference for this tour.
Registration for tour must be received by February 28, 2003.

Rockwell Collins (NYSE: COL), a leader in aviation electronics and communications for government and commercial applications, invites INCOSE conference attendees for a tour of its corporate headquarters, located in Cedar Rapids, Iowa.

Rockwell Collins is a global company providing aviation electronics and communications for the world's aircraft manufacturers and more than 400 airline customers, as well as a major share of the world's military forces. The company maintains headquarters and manufacturing operations in the United States in addition to locations in Europe, Australia and Mexico. Rockwell Collins is organized into two business units: Commercial Systems and Government Systems, and also provides world-class customer support through Collins Aviation Services, which offers training, technical support and total customer service solutions through a network of more than 60 service centers and service bases.

As a leader in satellite-based air traffic management capabilities, Rockwell Collins has developed a scalable, open architecture avionics system. This system provides the advanced communication, navigation and surveillance capabilities required for data-intensive aircraft operations. Based on a common, yet highly partitioned hardware and software infrastructure, this advanced open architecture accommodates functionality upgrades needed as commercial and military operational requirements continue to evolve.

New technologies are developed within the Rockwell Collins Advanced Technology Center, which collaborates with Commercial Systems and Government Systems, as well as various government agencies and industry groups, to bring new advancements to the aviation electronics and communications markets. Current research with NASA in Synthetic Vision will provide enhanced situational awareness for operators of commercial and military aircraft.

Rockwell Collins has adopted the principles of Lean Electronics™, a company-wide initiative to enhance customer value through the elimination of waste in process. The company has been recognized by leading experts for its application of Lean principles beyond the manufacturing environment.

The Rockwell Collins tour will include avionics systems mock-ups that are in production, manufacturing center as well as demonstrations of the newest advances in applications and technology.

Conference attendees must register for the Rockwell Collins tour by February 28, 2003. The cost of the tour is included in the conference registration fee.

More information about Rockwell Collins is available on the World Wide Web at http://www.rockwellcollins.com

THE SEARCH FOR EARHART'S PLANE
Rod Blocksome and Tom Vinson
Tuesday, March 11, 2003 7 p.m.

Over the last four years, volunteer members of the Collins Amateur Radio Club have been using computer models and simulations to back-calculate the most likely distance to Amelia Earhart's Lockheed L10E Electra, using data from her last HF transmissions. Signal strength analysis, navigational techniques used during that era, equipment tests and reproductions, maps of the period, radio propagation conditions present that day, interference and archive research into the plane's equipment were all used to predict the most likely place the plane went down. Did it actually go down? This presentation will walk through their methods and results utilized to help solve what happened to Amelia Earhart on that fateful flight on July 2, 1937. The results on the deep ocean search expedition the presenters recently returned from will be shared.

Biography for Rod Blocksome, Senior Systems Engineer, for Rockwell Collins.
Rod Blocksome has been with Rockwell Collins for over 34 years, and has held many positions in design engineering, systems engineering, and engineering management. Blocksome obtained his MSEE degree 1973 and BSEE in 1968, both from Kansas State University. He has authored numerous papers and articles on radio communications, VHF links, and measurement techniques. Blocksome is a member of the search team attempting to locate Amelia Earhart's plane. An Amateur Radio Operator for 42 years, he is uniquely qualified to mount a search for a plane lost at sea for 65 years based upon its radio transmissions.

Biography for Tom Vinson, Programs Manager, Advanced Data Links for Rockwell Collins.
Tom Vinson is a graduate of Southern Illinois University with degrees in Electronic Technology and Industrial Engineering. He received a Masters Degree in Business from Iowa State University in 1985. Vinson has 28 years of experience at Rockwell Collins with 17 years in Program Management. His current position is Programs Manager of Rockwell Collins' Advanced Data Links Networks. He is an Amateur Radio operator and active in the Collins Amateur Radio Club and the Eastern Iowa DX Association. Vinson is the team lead for the Amelia Earhart discovery project for the Collins Amateur Radio Club.

INTERNATIONAL COUNCIL ON SYSTEMS ENGINEERING HEARTLAND CHAPTER
P.O. Box 10012 Cedar Rapids, IA 52410-0012 (USA)
Phone: (319) 295-9504 or (800) 366-1164
Email: heartlandbod@incose.propagation.net
www.incose.org/heartld/index.htm

Benefits of a Membership in INCOSE
A membership in the International Council on Systems Engineering will expand your view of the engineering of complex systems and your knowledge of the many aspects of the practice. Project managers, software and hardware engineers and product developers are joining INCOSE to learn how to the use the systems engineering process and apply it to their industries. Get a global perspective of your job responsibilities. Learn how the application of systems engineering techniques can improve your job performance and your organization's well being.

With your membership, you'll receive the following
- ❒ Network with 3900+ Multi-National Systems Engineering Professionals
- ❒ Quarterly Publication, Insight
- ❒ Systems Engineering, the Journal of INCOSE
- ❒ Contribute through INCOSE Technical Committees
- ❒ Collaborate with Experts and Practitioners
- ❒ Lowest Prices on INCOSE Publications
- ❒ Exclusive access to the Members' Only Area on our website
- ❒ Membership Directory (download online from Members' Only Area)

Your membership supports
- ❒ Annual International Symposia
- ❒ Local Chapter Operations
- ❒ INCOSE World Wide Web
- ❒ INCOSE List server (for online discussions)
- ❒ INCOSE Representation on Standards Committees
- ❒ Professionally Operated INCOSE Office
- ❒ You'll have opportunities to purchase
    - ○ INCOSE Guidebooks and Handbooks
    - ○ Annual Proceedings
    - ○ Annual Proceedings on CD-ROM
    - ○ Products from Technical Committees

Local Chapter opportunities
- ❒ INCOSE Avenue of the Saints Conference on Systems Engineering
- ❒ Educational opportunities
- ❒ Professional development
- ❒ National Engineers Week

TUTORIAL: T1
Managing Application Development Projects Using the Microsoft Solutions Framework

Jeff Carter - Rockwell Collins, Inc.

Abstract

The primary objective of most application development projects is to deliver a useful, usable technology solution on time and under budget. Moreover, it is desirable to achieve this objective on a consistent and repeatable basis. However, according to a recent study conducted by the Standish Group, only 26 percent of application software projects succeed, while 28 percent fail outright and the remaining 46 percent are challenged (i.e. over budget and/or behind schedule). *Why is project success so difficult to achieve?* The results of the Standish Group study, published in the September 1998 issue of PM Network, suggest that technology is rarely the cause of project failure. Instead, project failure is attributed to a breakdown of processes, communications, and organizational structures.

One highly effective solution for enabling project success is embodied in a collection of models, principles, and best practices known as the Microsoft Solutions Framework (MSF). By placing an emphasis on the people and processes associated with application development projects, the guidance provided by MSF can dramatically increase the probability of successfully building and deploying virtually any type of technology solution. The foundation of the Microsoft Solutions Framework is effective teaming, proactive risk management, and a flexible process model for managing project lifecycle activities.

Tutorial Outline

1. 0800-0900 Module 1: Overview of the Microsoft Solutions Framework

   This module provides an introduction to MSF along with a discussion of key concepts, models, guides, and best practices.

   Module topics include:
   - Building an MSF project team
   - Managing project risks
   - Establishing the project lifecycle

2. 0900-1000 Module 2: Starting an Application Development Project

   This module provides a high-level overview of the goals, activities, milestones, and deliverables associated with the envisioning phase of the MSF process model.

   Module topics include:
   - Selecting and preparing the project team
   - Defining the application solution
   - Scoping the solution
   - Establishing a basis for change

3. 1000-1030 Module 3: Planning the Application Development Project

   This module provides a high-level overview of the goals, activities, milestones, and deliverables associated with the planning phase of the MSF process model.

   Module topics include:
   - Determining what to build
   - Planning how to build the solution

- Planning when to build
- Preparing the development and test environment

4. 1030-1100 Module 4: Developing the Technology Solution

This module provides a high-level overview of the goals, activities, milestones, and deliverables associated with the developing phase of the MSF process model.

Module topics include:

- Benefits of internal releases and the daily build process
- Process and output of the testing activity

5. 1100-1200 Module 5: Stabilizing and Deploying the Technology Solution

This module provides a high-level overview of the goals, activities, milestones, and deliverables associated with the stabilizing and deploying phases of the MSF process model.

Module topics include:

- Testing and piloting a solution
- Deploying the solution to a production environment
- Recommended activities involved in completing a project

Biography for Jeff Carter, Principal Software Engineer - Rockwell Collins, Inc.
Jeff Carter has over 17 years of extensive project management, application development, and consulting experience spanning a wide range of embedded, desktop, client/server, and Web-based technology solution development efforts. He has significant experience in building multi-disciplinary project teams, implementing proactive risk management, and directing project lifecycle activities using the Microsoft Solutions Framework.

Jeff currently serves as a principal project manager at Rockwell Collins where he is responsible for the overall direction, control, and coordination of enterprise-wide application development projects. He has also served in software development, project management, and consulting roles at Parsons Technology as well as Microsoft Corporation. Jeff holds a number of industry-respected credentials including Project Management Professional (PMP), Microsoft Certified Solutions Developer (MCSD), and Microsoft Solutions Framework Master Trainer

Jeff received his Bachelor of Science from Upper Iowa University and is pursuing graduate studies in Project Management at the University of Wisconsin-Platteville.

Contact Information
Jeff Carter, PMP, MCSD
Principal Software Engineer
Rockwell Collins, Inc.
400 Collins Road NE, M/S 107-150
Cedar Rapids, IA 52498
Phone: 319-295-8868
Email: jdcarter@rockwellcollins.com

TUTORIAL: T2
The Past, Present and Future of Structured Analysis

Jeffrey O. Grady - JOG System Engineering, Inc.

Abstract
Over the past 50 years a fascinating story, yet to be heard by many in our profession, has evolved regarding structured modeling methods and the many and varied structures that resulted. The whole evolutionary process started in the 1950s with flow charting used by both hardware and soft-ware analysts. The hardware and systems engineers remained with flow charts, drawn horizontally rather than vertically, but software people migrated to a host of models over a period of 50 years. Now, there emerges a new model from the software community that promises to restore unity between hardware, software, and system engineers and their works encouraging improved human communication and consequently significantly improved system integration during development. On-going work between Object Modeling Group (OMG) and the International Council on Systems Engineering (INCOSE) promises to close the gap between Unified Modeling Language (UML) use for software development and its use for systems and hardware development.

Tutorial Outline

1. 1300-1330 Fundamentals of Structured Analysis

   In the definition and solution of the tremendously complex problems development organizations must face today, the ad hoc approach is seldom adequate. In fact, models with only one facet of analysis are seldom adequate either. A three faceted general structured analysis framework will be offered and its use supported through identification of benefits to be derived.

2. 1330-1400 Structured Analysis Past

   Flow charting begins the story. In the beginning this method was used by hardware, software, and system people. Early attempts to merge data and processing analysis are discussed applying HIPO/IPO (which was also the basis for behavioral diagramming and EFFBD) and SADT (which was also the basis for IDEF 0).

3. 1400-1500 Current System and Hardware Models

   This period covers functional flow diagramming, behavioral diagramming, EFFBD, hierarchical functional diagramming and IDEF 0.

4. 1500-1600 Relational Database Development

   This period will cover relational database development (using table normalizing and IDEF 1X) as well as modern structured analysis, and early OOA variations pointing out how a hardware dominated system engineer can talk to software people through their models.

5. 1600-1700 The Shining Light at the End of the Dark Tunnel

   Industry applies multiple models today each tuned to its related technology and knowledge base. One might think that is the perfect situation but the reality is that multiple models create boundary conditions that result in difficult human communication. Work is on-going right now to radically change the development environment in companies responsible for developing systems to satisfy difficult and complex requirements. What will emerge in the next few years is a variation on the Unified Modeling Language (UML) that will be used by hardware, software and system people breaking down the existing barriers to human communication. The seeds of that agreement will be discussed showing a comparison of the artifacts of UML coordinated with those of traditional structured analysis.

Jeffrey O. Grady - JOG System Engineering, Inc.

The emergence of a third development orientation called model-based development will also be discussed as an extension of the current document and database driven models and the need for structured analysis relative to model based.

Biography for Jeff O. Grady, President - JOG System Engineering.
Since 1993 Jeff O. Grady has been the President of JOG System Engineering, Inc., a system engineering consulting firm focused on assessment of current client capability coupled with education leading to planned improvements. Formerly, engineering manager of Systems Development at General Dynamics Space Systems Division working on space transport and energy systems. Other experience over a period of 30 years in industry included: system engineer with GD Convair on cruise missiles; system engineer, project engineer, and field engineer with Ryan Aeronautical on unmanned photo reconnaissance, ELINT, electronic warfare, and target aircraft; and customer training instructor with Librascope on underwater fire control systems. Served ten years in the U.S. Marines in the aviation communications field.

Author of five recent books in the system engineering field (System Requirements Analysis, McGraw-Hill, 1993; System Integration, CRC Press, 1994; System Engineering Planning and Enterprise Identity, CRC Press, 1995; System Validation and Verification, CRC Press, 1997; and System Engineering Deployment, CRC Press, 1999) and system engineering papers. Lecturer in systems engineering certificate programs at University of California San Diego, Indiana-Purdue University, University of Alabama Huntsville, and University of California Irvine. Jeff is a member of SOLE, and IEEE. He is also a charter member of, the first elected Secretary for, the initial Journal Editor for, a Fellow and Founder of the International Council on Systems Engineering (INCOSE). Currently technical vice president for the San Diego Chapter of INCOSE.

Jeff holds a Bachelor's degree in Mathematics from San Diego State University and an MS in Systems Management from University of Southern California.

Contact Information
Jeffrey O. Grady
JOG System Engineering
San Diego, CA 92122
Phone: 858-458-0121
Email: jgrady@ucsd.edu

John M. Novak - Rockwell Collins, Inc.

Abstract

An overview of Lean, in which participants begin to understand the concept of flow and the effects of waste on flow and can apply the concepts to their own processes. Topics covered are lean principles, types of waste, lean tools, value stream mapping, and event types. A simulation will have participants walk through a systematic elimination of waste converting a business to a lean business. The message is; lean principles and tools apply to your processes too, now go do-it.

Tutorial Outline

1. 0800-1030 Lean Principles

   Topics covered are lean principles, types of waste, lean tools, value stream mapping, and event types.

2. 1030-1200 Enterprise Simulation

   Simulation will have participants walk through a systematic elimination of waste converting a business to a lean business.

Biography for John Novak, Senior Lean Electronics Consultant - Rockwell Collins, Inc.

John Novak is a 23 year employee of Rockwell Collins and is currently a Lean Consultant. He holds a B.A.S. degree, a Lean Manufacturing Certificate, and is a member of the American Society for Quality. John has provided education, and applied lean principles and tools in manufacturing and non-manufacturing settings at Rockwell Collins, customers and suppliers. Previous to his 23 years at Rockwell Collins, John was a national service electrical engineer, a United States Air Force electronics instructor, and telephone systems equipment engineer.

Contact Information
John M Novak
Sr Lean Electronics Consultant
Rockwell Collins, Inc.
400 Collins Road NE
Cedar Rapids, Iowa 52498
Phone: 319-295-6613
Email: jmnovak@rockwellcollins.com

Colonel Steven A. MacLaird, USAF Joint Tactical Radio Systems Joint Program Office
Colonel Charles M. Whitehurst - Air Force Command and Control & Intelligence, Surveillance and Reconnaissance Center
Kendall L. Ackerman - Aeronautical Enterprise Program Office
Edward J. Calhoun - Rockwell Collins, Inc.

Abstract

Introduction to JTRS Operational Concept (Col. Steve MacLaird)
Joint Tactical Radio Systems (JTRS) Joint Program Office (JPO) provides DOD's oversight responsibility for the JTRS Program Clusters 1 – 4 and subsequent follow-on Clusters. Their responsibilities are to deliver the Software Communication Architecture (SCA), Waveforms (Wf), crypto-algorithms and provide leadership in delivering the various clusters to insure interoperability throughout the services. To date 26 of the 33 ORD Wfs are on contract and two of the three identified crypto-chip producers are writing algorithms. In conjunction with this, the SCA has been submitted through the Software Defined Radio Forum (SDRF) to the international standards agency known as the Object Management Group (OMG). Emphasis will be on the wireless networking capabilities of JTRS.

JTRS Cluster 1: Ground and Rotorcraft (Mr. Ed Calhoun)
Rockwell Collins is a member of the Boeing team that has been awarded JTRS Cluster I (Ground Vehicles and Rotorcraft). They are responsible for implementing the JTRS "Software Communications Architecture (SCA)", into a form factor that can be accommodated on the multiple platforms.

JTRS Cluster IV Airborne Migration (Col. Charles M. Whitehurst)
AFC2ISRC is the lead AF command for implementing the Joint Tactical Radio System (JTRS). The Center is currently building a multi-year migration plan for fielding JTRS to satisfy handheld, vehicular, airborne and fixed radio requirements. The migration plan will lay out transition timing and priorities to allow planners and programmers to begin inserting JTRS funding for installation and integration into the Air Force 06 program objective memorandum.

JTRS Aircraft Integration (Mr. Ken Ackerman)
Integration of a new capability onto a legacy aircraft is a major undertaking, especially one as complicated as the JTRS. This is compounded by the extensive variations of platforms. Fighters, Bombers, Heavy Lift, and C2, all impose different constraints on size power and cooling, not to mention that no two internal architectures are the same. Our aircraft do not currently have the bandwidth, memory, processing power, or displays to properly exploit the planned capabilities of the JTRS. Due to financial constraints, gaining this capability will be an evolutionary process that may take several spirals to complete.

Colonel Steven A. MacLaird, USAF Joint Tactical Radio Systems Joint Program Office
Colonel Charles M. Whitehurst - Air Force Command and Control & Intelligence, Surveillance and Reconnaissance Center
Kendall L. Ackerman - Aeronautical Enterprise Program Office
Edward J. Calhoun - Rockwell Collins, Inc.

Tutorial Outline

1. 1300-1400 Introduction to JTRS Operational Concept **(Col. Steve A. MacLaird)**

   This presentation will identify current delivery schedules and status of each of the clusters and identify details of the Wideband Networking Waveform (WNW) strategy for the Airborne Network and its CONOPs.

2. 1400-1500 JTRS Cluster 1: Ground and Rotorcraft **(Mr. Ed Calhoun)**

   This presentation will provide an overview of the JTRS "Software Communications Architecture (SCA)", the hardware and software elements that comprise the building blocks, and the various form factors that are being developed to accommodate the space available on the multiple platforms which will be hosting the JTRS Cluster 1.

3. 1500-1600 JTRS Cluster IV Airborne Migration Plan **(Col. Charles M. Whitehurst)**

   This presentation will outline the strategy and timeline of the AF JTRS Migration Plan with emphasis on warfighters requirements.

4. 1600-1700 JTRS Aircraft Integration **(Ken Ackerman)**

   This presentation will show the strategies and considerations necessary to actually integrate JTRS into our aircraft. We must consider the current platform architecture, its ability to host this new capability, and how we plan to move our diverse fleet toward "Network Centric Warfare".

Colonel Steven A. MacLaird, USAF Joint Tactical Radio Systems Joint Program Office
Colonel Charles M. Whitehurst - Air Force Command and Control & Intelligence, Surveillance and Reconnaissance Center
Kendall L. Ackerman - Aeronautical Enterprise Program Office
Edward J. Calhoun - Rockwell Collins, Inc.

Biography for Colonel Steve MacLaird, Program Director, at Joint Tactical Radio System (JTRS) Joint Program Office (JPO), Rosslyn, VA.

Colonel Steve MacLaird is Program Director, Joint Tactical Radio System (JTRS) Joint Program Office (JPO), Rosslyn, VA. His responsibilities include: 1) development and acquisition of the new family of software defined radios to meet Joint use throughout the services with the goal of replacing 750,000 radios in the 2Mhz to 2 GHz radio spectrum; 2) coordinating the development of the radio Software Communications Architecture into commercial and international standards; 3) the development of the JTRS radio families to serve domestic and international uses, as well as encouraging their commercial use; 4) overseeing five Service cluster acquisition programs valued at over $9 Billion, 5) Developing, certifying, and fielding Software Defined Radio Waveforms and Crypto Algorithms, and 6) Fund and manage the oversight of the Joint Technology Laboratory (JTeL) and JTRS Joint Integration Testing Center (JITC).

Colonel MacLaird has held base, central, and systems level contracting positions; acquisition management positions at the Pentagon and systems center level; and has nine years of international sales experience. He served with the 1996 Air Force Scientific Advisory Board for Battle Management, Command, Control, Communications, Computers and Intelligence, Surveillance and Reconnaissance (BMC^4ISR), which paved the way for the new core competency known as Global Engagement. His acquisition assignments permit insight into the complete sensor to shooter "kill chain" throughout several fighters, missile integration programs (air-to-air, air-to-ground, and precision guided munitions), BMC^4I SR, and space system support/development. Colonel MacLaird's program involvements include: aircraft (X-29, F-15, F-16, AWACS, Joint STARS); numerous airlift, tanker, special operations, and training aircrafts; and OSA, VIP/SAM aircraft, including the Presidential Fleet; missile integration (AMRAAM, JDAM, TSSAM, JSOW, and WCMD); space (Hubble Telescope development, ground based space de-formable mirror technology, and space based chip/sensor concept evaluation).

Colonel MacLaird has a B.S. in Business Finance from Kansas State University and was a Distinguished Graduate of Air Force ROTC. He received an MSM in Management of Personnel Resources from Houston Baptist University.

Colonel Steven A. MacLaird, USAF Joint Tactical Radio Systems Joint Program Office
Colonel Charles M. Whitehurst - Air Force Command and Control & Intelligence, Surveillance and Reconnaissance Center
Kendall L. Ackerman - Aeronautical Enterprise Program Office
Edward J. Calhoun - Rockwell Collins, Inc.

Biography for Colonel Charles M. Whitehurst, Director, Global Communications and Information, Air Force Command and Control & Intelligence, Surveillance and Reconnaissance Center (AFC2ISRC), Langley AFB, Virginia.

Colonel Whitehurst leads 94 military and contractor personnel supporting AF and joint C2 systems, including Air Force lead for major weapon-system-designated tactical data links, message development, and platform implementations. His directorate builds and updates a myriad of migration plans and roadmaps to include the Tactical Data Link Roadmap, the Satellite Terminal Roadmap, the Joint Tactical Radio System Migration Plan, and the Deployed Theater Information Grid. Colonel Whitehurst was commissioned in 1977 and entered into training and follow on assignments as a weapons controller and air battle manager. While commander of the 631st Tactical Air Control Squadron, Wuerzburg Army Installation, Germany, his team captured the USAFE's 1989 General Leo Marquez Award. During command of the 325th Training Squadron, Tyndall AFB, Florida, he authored and oversaw the largest command, control and communications upgrade in the history of the USAF Air Battle Managers training program. Commanding the largest, most dispersed Group in PACAF, the 607th Air Support Operations Group, Osan Air Base, South Korea, he ramrodded a total retrofit of this combat unit. Colonel Whitehurst is a master air battle manager who has served command tours in USAFE, ATC, PACAF and AFOTEC. He served as a staff officer in TAC, NORAD, AETC and USAFE.

Colonel Whitehurst has 1976 Bachelor of Science degree in Education, East Carolina University, Greenville, NC; a Masters of Science degree in Education, East Carolina University, Greenville, NC; and a Master of Science degree in Military Art and Science, Army Command and General Staff College, KS.

Colonel Steven A. MacLaird, USAF Joint Tactical Radio Systems Joint Program Office
Colonel Charles M. Whitehurst - Air Force Command and Control & Intelligence, Surveillance and Reconnaissance Center
Kendall L. Ackerman - Aeronautical Enterprise Program Office
Edward J. Calhoun - Rockwell Collins, Inc.

Biography for Ken Ackerman, Avionics Engineer, at Aeronautical Enterprise Program office at Wright Patterson Air Force Base.
Ken Ackerman is an Avionics Engineer in the Aeronautical Enterprise Program office at Wright Patterson Air Force Base working Tactical Data Links and the Joint Tactical Radio System. He chairs the JTRS Airborne Integration Systems Engineering Cadre (JAISEC) with representatives from 13 different Air Force (AF) platforms, the Navy, JTRS Program Office and industry. He also chairs a Tactical Data Forum working Link-16 integration issues for the AF. He spent four years at the AF Materiel Command Headquarters working Open Systems Architecture, Joint Technical Architecture (JTA), Diminishing Manufacturing Sources/Material Shortages (DMS/MS), and writing Systems Engineering Policy. Prior to that, he spent twelve years building and testing Inertial Navigation Systems (INS) for ballistic missile.

Ken has a BS in Electrical Engineering from Ohio University and a MS in Systems Engineering Management from the University of Dayton.

Biography for Edward J. Calhoun, Government Systems Business Development Manager, Airborne Communications and Data Link Programs - Rockwell Collins, Inc.
Edward J. Calhoun is the Rockwell Collins Government Systems Business Development Manager for all Airborne Communications and Data Link Programs, including the Joint Tactical Radio System (JTRS) and Link-16 for Rockwell Collins. His responsibilities include defining and executing business pursuits for current and future information systems by assessing customer needs and requirements. Mr. Calhoun has over 30 years of broad experience in the management, test, and evaluation of advanced technology systems. His focus has been primarily on Command, Control, Communications, Computers, and Intelligence (C^4I) systems, Global Air Navigation systems, Electronic Warfare Systems, and Advanced Security Systems. Prior to retiring from the U.S. Air Force, he led the Integration and demonstration of the first VME based, airborne fiber-optic communications backbone utilizing asynchronous transfer mode (ATM) for both onboard data transfer and off-board communications. He recently captured the largest US DOD single product communications program ever undertaken by the US Government, the JTRS Cluster 1 program.

Colonel Steven A. MacLaird, USAF Joint Tactical Radio Systems Joint Program Office
Colonel Charles M. Whitehurst - Air Force Command and Control & Intelligence, Surveillance and Reconnaissance Center
Kendall L. Ackerman - Aeronautical Enterprise Program Office
Edward J. Calhoun - Rockwell Collins, Inc.

Contact Information

Colonel Steven A. MacLaird, USAF
Joint Tactical Radio Systems Joint Program Office
1777 Kent Street, Suite 200
Arlington, VA 22209
Email: steven.maclaird@hqda.army.mil

Colonel Charles M. Whitehurst, USAF
Air Force Command and Control & Intelligence
Surveillance and Reconnaissance Center (AC2ISRC)
130 Andrews Street, Suite 216
Langley AFB, VA 23665-1993
Phone: 757-225-2999
Email: charles.whitehurst@langley.af.mil

Mr. Kendall (Ken) L. Ackerman
Aeronautical Enterprise Program Office
Aeronautical Systems Center
2145 Monahan Way Bldg 28
Wright Patterson Air Force Base, OH 45433
Phone: 937-255-7210 x3591
Email: kendall.ackerman@wpafb.af.mil

Mr. Edward J. Calhoun
GS Business Development Manager
Rockwell Collins, Inc.
400 Collins Road NE
M/S 120-121
Cedar Rapids, IA 52498
Phone: 319-295-0697
Email: ejcalhou@rockwellcollins.com

TUTORIAL: T5
Target Costing –
Enhancing Revenues through Effective Product Development

Tami L Capperauld - Boeing Company
Janet Horton – Boeing Company

Abstract

From corporate growth strategies, to enhancing shareholder value, companies with an effective product development process have a definite competitive advantage in the new millennium. As product life cycles shorten and 'time to market' becomes crucial, a reliable method of delivering the right product - at the right time - for the right price is essential. Target Costing is a proven method that leading-edge organizations are using to reduce the inherent risk of new product development by providing 'best value' products to their customers while, at the same time, increasing profits.

In this interactive workshop, Tami Capperauld, Senior Finance Analyst for the Boeing Company, shares implementation experiences in Commercial Airplane Programs. Using a case study approach with focused discussion, you will learn how to apply the fundamentals of Target Costing to your organization's product development processes.

Tutorial Outline

1. 0800-1200 Target Costing

> Specific topics to be covered include: Target Costing principles and process - Key core tools - Product definition alignment with customer value - Target decomposition - Product life cycle management - Multi-year product, profit and cost planning - Implementation realities.

Biography for Tami Capperauld, Senior Finance Analyst - Boeing Company.

Tami Capperauld, Senior Finance Analyst and Leader of the Boeing Market Driven Target Costing (MDTC) Implementation & Support Group, has been a member of Boeing Commercial Airplanes (BCA) for 13 years focusing on development and implementation of advanced cost management methods and processes. As a pioneer in Target Costing for BCA, she has both led and participated in implementing MDTC on several major airplane programs.

Tami is currently the Lead and Subject Matter Expert for MDTC Implementation in Boeing Commercial Airplanes and a Steering Committee Member for the Boeing Company Affordability Process Action Team. She is responsible for conducting Program Leadership Team overviews, Program Process Maturity Assessments, preparing implementation plans and tailoring the implementation strategy and approach. She is a highly rated MDTC Workshop Instructor and leads the BCA Best Practice Integration Team made up of multi-disciplinary practitioners and their Managers.

Tami is also recognized as an industry expert on Target Costing. She is the Boeing Commercial Airplanes representative to the Consortium of Advanced Manufacturing – International, (CAM-I) Cost Management Systems Program and is the CAM-I Target Costing Interest Group Chairperson. She has made Target Costing presentations in the United States and Japan and has received numerous requests by industry to conduct Target Costing workshops.

Tami was the 2002 recipient of the prestigious Robert A. Bonsack Award. This award, given annually, is for “Distinguished Contribution in the Advancement of Cost Management.”

Prior to Boeing, Tami implemented satellite operations for international trade finance services on behalf of a major financial institution.

Tami L Capperauld - Boeing Company
Janet Horton – Boeing Company

Tami graduated Magna Cum Laude with a B.S. degree in Business Administration, with a specialization in Finance, in 1987 from Central Washington University.

Biography for Janet Horton, Senior Estimating and Pricing Specialist - Boeing Company.

Janet Horton, Senior Finance Estimator has been a member of the Boeing Company for 17 years. Janet's background includes Aviation Manufacturing, Business Analyst, Estimating and Pricing Specialist and her current position as a Market Driven Target Cost (MDTC) subject matter expert (SME). As a pioneer of the MDTC process in Boeing Commercial Airplanes (BCA), she has led and participated in implementation of MDTC on several commercial airplane programs.

As a MDTC SME Janet is responsible for performing Program Maturity Assessments, MDTC workshops, Leadership workshops, MDTC process overviews, and developing implementation plans and contouring the implementation approach to the desires of the program. Janet also works with the program in understanding and communicating design-estimating relationships (DER) and cost estimating relationships (CER) and instituting target allocation methodologies.

Janet is a BCA focal for the Affordability Process Action Team (APAT). The APAT is a Boeing Enterprise wide team that ensures consistent and successful implementation of a common Affordability process for all Boeing products and services.

Janet graduated from the University of Phoenix with honors, with a BSB/A with emphasis Accounting.

Contact Information
Tami Capperauld
Market Driven Target Costing Implementation & Support Lead
Boeing Commercial Airplanes
BCA Group Offices – Finance
PO Box 3707 M/S 6X-PA
Seattle, WA 98124
Phone: 425-234-4458
Email: tami.l.capperauld@boeing.com

Janet Horton
Boeing Commercial Airplanes
BCA Group Offices – Finance
PO Box 3707 M/C 6X-PA
Seattle, WA 98124
Phone: 425-234-4491
Email: janet.m.horton@boeing.com

TUTORIAL: T6
Pursuit and Order Capture: Winning Solutions

Carl M Watts - Rockwell Collins, Inc.

Abstract

In a world of unlimited opportunity for integrated solutions; all of us are constrained by boundaries that include limited resources, incomplete customer requirements, and environmental inhibitors. By changing focus from that which we have or can do … to "selling" that which the will "win" a customer's award; we move beyond a competitive challenge to a collaborative solutions.

Think about the earliest days of problem-solving when "fishbone" charts were built that described issues using the four "M's" …. Manpower/Machines/Methods/Materials or the five "P's" … People/Plant/Product/Procedures/Promotion. Winning solutions are no more than advanced problem solving outcomes that delight all stakeholders.

Tutorial Outline

1. 1300-1330 Getting Started

   The fundamental basis of any pursuit is a "Capture Plan" that focuses on the single sales opportunity at hand. Capture planning is intended to guide the organization whether it is account management, engineering, marketing, program office, contracts, and finance to a common storyline on "Why buy my solution" A high quality "Capture Plan" galvanizes internal efforts and external activities to achieve "win-win" results for both the customer and the supplier.

2. 1330-1530 The Capture Plan

   Many focused pursuits are drill down derivatives from higher level plans, but in many cases they represent a unique customer and need.

   A Capture Plan should include, but is not limited to the following details:
   - Environmental/Situation Analysis
   - Competitive Assessment/Market Positioning
   - Customer Contact Plan/Requirements Capture
   - What does it take to win scenarios?
   - Communication/Deployment Plan

3. 1530-1630 Ideas to make it all work for you

   The most common response to boilerplate pursuit process/training is "We're different … Our customers are different … our systems are different." Differences are the engine that drives current opportunities to ideal solutions. Starting points, vehicles, roadmaps, and destinations will all vary … the fun is in the chase and capture.

4. 1630-1700 Summary

   Enterprise integrated Pursuit and Capture processes are just as much of a "system solution" as the hardware/software designs that are offered to the customer. Organizing and managing the "hunt" for success will bring greater success.

Carl M Watts - Rockwell Collins, Inc.

Biography for Carl Watts, Director, Business Acquisition Air Transport Systems, at Rockwell Collins, Inc.
Carl Watts joined Rockwell Collins in 1980 after 10 years working for a major national retailer. Mr. Watts has held a number of leadership roles in Product Management, Support Services, General Sales Management, Strategic Planning, Forecasting, and Order Administration. He is currently the Director, Sales Support for Air Transport Services. He has a Bachelor of Science degree from Drake University and is a certified Quantitative Business Analyst (The Brotherhood of Actuaries).

Contact Information
Carl M. Watts
Director, Business Acquisition
Air Transport Systems
Rockwell Collins, Inc.
400 Collins Road NE
Cedar Rapids, IA 52498
Phone: 319-295-6097
Email: cmwatts@rockwellcollins.com

Jeff Carter - Rockwell Collins, Inc.

Abstract

Outsourcing is key success factor for many organizations that build and deploy software. This presentation will discuss Rockwell Collins' experiences with outsourcing software development activities to HCL Technologies, which is a global IT services company in India. Presentation topics include:

- Outsourcing utilization and rationale
- Role of HCL
- High-level workflow process
- Project communications
- Outsourcing results
- Key Success factors

Biography

Jeff Carter has over 17 years of extensive project management, application development, and consulting experience spanning a wide range of embedded, desktop, client/server, and Web-based technology solution development efforts. He has significant experience in building multi-disciplinary project teams, implementing proactive risk management, and directing project lifecycle activities using the Microsoft Solutions Framework.

Jeff currently serves as a principal project manager at Rockwell Collins where he is responsible for the overall direction, control, and coordination of enterprise-wide application development projects. He has also served in software development, project management, and consulting roles at Parsons Technology as well as Microsoft Corporation. Jeff holds a number of industry-respected credentials including Project Management Professional (PMP), Microsoft Certified Solutions Developer (MCSD), and Microsoft Solutions Framework Master Trainer

Jeff received his Bachelor of Science from Upper Iowa University and is pursuing graduate studies in Project Management at the University of Wisconsin-Platteville.

Contact Information
Jeff Carter, PMP, MCSD
Principal Software Engineer
Rockwell Collins, Inc.
400 Collins Road NE, M/S 107-150
Cedar Rapids, IA 52498
Phone: 319-295-8868
Email: jdcarter@rockwellcollins.com

L.D. Chen and Yiannis Papelis - University of Iowa

Abstract

An overview and update on the National Advanced Driving Simulator (NADS) will be given in this presentation. The NADS is a high-fidelity driving simulator whose goal is to investigate human-centered issues as they relate to driving safety. Its primary mission is to investigate causes of accidents, with the goal of reducing fatalities on U.S. roadways. The NADS, whose construction has been funded primarily by the National Highway Traffic Safety Administration (NHTSA), is operated by The University of Iowa on a self-sustaining basis. A key component of the simulator's fidelity is the unique 9-degree-of-freedom motion system that reproduces normal driving accelerations to a degree never before possible. The simulator accommodates full-sized, fully instrumented vehicle cabs driven by research participants and utilizes a 24-foot projection dome, a motorized turntable that rotates +/- 330°, a six-legged (hexapod) motion platform that moves about a 64-foot square bay, high-frequency actuators that accurately simulate road surfaces, fifteen high-resolution projectors that provide a 360° field of view with visual images updated 60 frames per second, and a surround sound system. User-friendly software tools enable users to quickly develop virtual environments and program scenarios necessary for research. In-house capabilities complement the NADS, providing a unique tool for highway safety research. Brief updates will be given on selected current and planned projects that have used or will use the NADS simulator.

Biography

L.D. Chen, Ph.D.
Director, National Advanced Driving Simulator
Professor, Dept. of Mech. & Ind. Eng.

Contact Information
L.D. Chen, Ph.D.
Director, National Advanced Driving Simulator
Professor, Dept. of Mech. & Ind. Eng.
NADS Building
2401 Oakdale Boulevard
The University of Iowa
Iowa City, IA 52242-5003 USA
Phone: 319-335-4851
Fax: 319-335-4658
Email: ldchen@nads-sc.uiowa.edu
Web site: http://www.nads-sc.uiowa.edu/
Web site: http://www.engineering.uiowa.edu/

Pete Baxter - Distributive Software
INCOSE Measurement Working Group (MWG) Chairman

Abstract

The CMMI relies heavily on a measurement process in planning, controlling and improving your organizations systems engineering activities. The amount of guidance, information and level of detail given to measurement in the CMMI is significantly greater than the previous family of CMMs. This presentation will introduce the measurement process model, measurement information model and measurement terminology used with in the CMMI. This includes an overview of the ISO/IEC 15939 – Software Measurement Process standard - the basis for measurement terminology within the CMMI. The presentation will also describe the measurement support process area within the CMMI, called "Measurement and Analysis", including required goals and products.

This presentation will show how, using a measurement process, mangers information needs can be refined into quantifiable and effective measurement reports. The presentation will demonstrate refining several CMMI's information needs (for example for requirements management) using the measurement information model. Additional samples (of the measurement information model) for risk management will be presented.

Once the measurement process and measurement information model of the CMMI are described, the presentation will discuss the use of measurement at each level within the CMMI. This includes: organizational measurement at level 3 and quantitative aspects of measurement at CMMI level 4. Finally, the presentation describes how Practical Software and Systems Measurement (PSM) can be used to implement a measurement process that satisfies the measurement needs of the CMMI.

Biography

Pete Baxter is a frequent author, trainer and presenter on the subject of measurement. He has had the privilege of working with some of the most quantitative and mature software and systems organizations in the world. He has provided measurement training to numerous government and industry organizations seeking to deploy or expand a measurement process. He has authored a number of technical articles, all on the subject of program management and measurement. He has presented at leading conferences such as the INCOSE Symposiums, Software Technology Conference (STC) and Applications of Software Measurement (ASM).

Pete Baxter is actively involved in the development of measurement standards and guidebooks in leading professional organizations. He is a member of the International Council on Systems Engineering (INCOSE), and is the current chair (and past co-chair) of the INCOSE Measurement Working Group. He is a contributor to and reviewer of Practical Software and Systems Measurement (PSM). He is the Distributive Software representative to the International Organization of Standards (ISO) Subcommittee on Software and Systems Engineering, where he was a member of the working group that developed ISO/IEC 15939 Software Measurement Process. He is a member of the SEI Subscriber Program, where we reviewed the measurement and analysis elements of the CMMI (sm). He is also a candidate standards editor and member of the IEEE. He is the President of Distributive Software, where he directs services delivery and product development for measurement and project management tools.

Contact Information
Peter Baxter, Development Manager
Distributive Software
Phone: 540-372-4500 x201
Web site: www.distributive.com
INCOSE Measurement Working Group Web site: www.incosemwg.org

PRESENTATION: P4
Integration of Program Performance (Technical)/Cost/Schedule Risk Management Through Network Logic Modeling

Keith D. Hornbacher - Hornbacher Associates

Abstract

Introduced with a survey of generally acknowledged Program Risk Management approaches, this session focuses on the specifics of modeling uncertainties to be found in the Integrated Master Plans of large programs. Benefit from a "hands on" look through a practitioner's experience, drawn from dozens of capital programs/projects where the Monte Carlo methodology was applied. Discuss the common and uncommon threads of what works well and what challenges remain unresolved -- often found running through programs ranging from a few million to several billion dollars. Attributes of modeling techniques, biases in data collection, and interpretation (plus potential misinterpretation) of results will be among the topics presented.

Biography

Mr. Hornbacher is the founder and principal of Hornbacher Associates, a firm that provides program risk management services to clients in the aerospace/defense and energy business sectors in the United States, Canada, and Europe. His consultancy spans nearly two decades of working with well-known clients. Engagements include leadership of program/project risk management in research and development, demonstration/validation of classified aircraft prototypes, owner-sponsored assessments of new technology in an offshore oil platform, decommissioning a nuclear power station, and construction of major cross-country natural gas pipelines. Mr. Hornbacher previously was vice president in the firm that developed the simulation software and methodology known as Monte Carlo for Primavera™, a module in a popular project management information systems suite. His professional affiliations and academic credentials include: Director, INCOSE-North Star; Chair, PMI-MN RM SIG; Senior Member, Institute of Industrial Engineers; Director, Minnesota Strategic Leadership Forum; Adjunct Faculty, University of Minnesota; MBA, Minnesota State University (Mankato); BSC, Iowa State University.

Contact Information
Keith Hornbacher
12800 Foliage Avenue
St. Paul
MN 55124-5340 USA
Phone: 952-891-3579
Fax: 952-891-1099
Email: info@HombacherAssociates.com

Art Gemmer - Rockwell Collins, Inc.

Abstract

A recent risk management conference reminded me of James Carville's admonition to the Clinton campaign in 1992 about it being the economy, stupid! The presentations focused on processes and methods as have other similar conferences and articles. This misses the point. The introduction of risk management to an organization is primarily a change in behavior.

The purpose of risk management is to make decisions, not to admire the risks. No behavior goes more to the core or soul of a company than how it makes decisions. Or to paraphrase Carville, it's the behavior, stupid!

Bringing risk management to an organization is a change in language and attitude towards risk and its link to decision making. Behavior changes at all organization levels and requires at least three elements:

- A repeatable process with defined steps and artifacts supported by applicable methods and tools.
- Widespread access to adequate knowledge sources to fuel the process.
- Functional behavior including human interactions, motivators, perceptions, communication, decision making processes and risk tolerance.

These are not independent elements; there are strong interactions that must be accounted for in implementing and sustaining risk management. Process and knowledge sources, while necessary, cannot by themselves change behavior (witness the scandals involving Barings Bank, Anderson and Enron). The last element is the key and yet it has received little attention. Although change management is a discipline in its own right, there are special considerations for risk management.

To introduce effective risk management practice in an organization requires the role of all three - process, knowledge and behavior - must be understood. However, it is the issues involving functional behavior that will determine whether a risk management practice can be successfully sustained.

Mr. Gemmer will discuss behavioral implications in introducing and sustaining an effective risk management practice.

Biography

Mr. Gemmer is the Principal Risk Analyst for Rockwell Collins, Inc. He received his BSEE in 1978 from Rose-Hulman Institute of Technology. He has over 24 years experience in risk management, project management and process improvement.

Mr. Gemmer's industry involvement includes work with the Software Engineering Institute, INCOSE and the Software Productivity Consortium. He is the author of the July 1997 IEEE Computer article, "Risk Management: Moving Beyond Process", and the 2002 Wiley Encyclopedia entry on Risk Management for Software Engineering. He is an invited speaker to numerous industry conferences and an advisor to the Cutter Consortium's Risk Management Intelligence Network.

Contact Information
Art Gemmer
Principal Risk Analyst
Rockwell Collins, Inc.
400 Collins Road NE, Cedar Rapids, Iowa 52498
Phone: 319-295-8929
Email: ahgemmer@rockwellcollins.com

PRESENTATION: P6
Language Extensions for Modeling Executable Specifications to Validate System Requirements

Nasib Naser, Ph.D. - Synopsys, Inc.

Abstract

Specifications Capture and functional Validation are the top two design challenges for System on Chip (SoC) design. Key engineering managers and program management people were polled to identify the areas that cause concern when starting a new project and the causes for design flaws after first silicon.

Their answers were: (1) "Incorrect or Incomplete Specification or Changes in Specifications, (2) functional validation." Systems designers too often rely on Power Point, Word or Excel to capture their system requirements and specifications then they start writing C code in an attempt to capture and validate the system requirements. Implementation engineers then discard these models in lieu of a text spec that must be interpreted. Hence, a 'Correlation Gap' is created between the system requirements and design implementation. Poor specification quality manifests itself on design implementation, software development, and has a major negative impact on meeting system specs and Time to Market.

This paper will present a systems design methodology based on C/C++ language extensions that captures specifications in an executable format along with its validation test benches. This new paradigm provides a virtual platform where a system's Hardware and Software (applications and embedded) systems along with the necessary System Test benches, are developed concurrently. This is made possible because the system's hardware and software functionality can be validated at simulation speeds in excess of 100,000 cycles per second. Additionally, this verification and validation environment is used throughout the design cycle and by several engineering departments, to ensure that the design requirements are being met in each successive stage of the design process. The language presented supporting such a methodology is based on C/C++ but goes beyond Object Oriented Programming. This language supports a paradigm that enables system level design to start from a concept and takes it all the way down to the Silicon.

The paper discusses the various levels of abstraction on which a successful design flow is constructed, starting with capturing specifications at an Untimed Functional Level, then moving the design to Register Transfer Level so that it can be synthesized to a SoC.

Biography

Dr. Nasib Naser Manages the Field Corporate Application Engineering for Synopsys System Level Design tools. He has an extensive experience in Embedded Systems Design, Computer Architecture, System-on-Chip and Real-Time Operating Systems. For several years Nasib worked with companies - including Synopsys - that provide System Level Design technologies and tools based on C/C++ and later on the Open Source C++ language extension also known as SystemC. Nasib also worked at Varian Associates as a technical lead for a group of system engineers developing state-of-the-art Distributed Control Software System for a multi-chamber wafer handler cluster tool. He spent more than ten years working at the Flight Simulation Facility at NASA/AMES Research Center at Moffet Field, managing the diagnostics software system for the Flight Image Generators and later he managed the front end Real-Time OS and Application Software.

Contact Information
Nasib Naser, Ph.D.
Synopsys, Inc.
901 South Mopac Expressway Bldg 5, Suite 300
Austin, TX 78746
Phone: 512-372-7671
Email: nasib@synopsys.com
Web site: www.synopsys.com/products/sld/sld.html

Jorge Buenfil - Rockwell Collins, Inc.

Abstract

A summary description of the elements of the UML notation is presented, followed by a description of the types of associations that are common among those elements and the creation and purpose of different UML diagrams. Once the foundation for a basic understanding of the UML is laid down, the application of the different UML artifacts to specific engineering tasks is presented, showing how the UML has something for everyone.

Biography

Jorge has been a software developer trainer since 1995. In mid 2001 he was tasked with organizing a UML training course and materials for Rockwell Collins engineers, which he has been delivering since then. Jorge is also the Rockwell Collins instructor for Rational Rose (a UML modeling tool) and Rational RequisitePro (a requirements management tool). Jorge is a member of The Heartland Chapter.

Contact Information
Jorge Buenfil
Sr. Design Engineer
Rockwell Collins, Inc.
400 Collins Rd NE
MS 107-150
Cedar Rapids
IA 52498-0001
Phone: 319-295-9326
Fax: 319-295-7914
Email: jrbuenfi@RockwellCollins.com

Lynette Freese - Rockwell Collins, Inc.

Abstract

The study of "Knowledge Management" is a growing trend in industry. As with many prior management "fads", there are usually plenty of critics who claim this to be yet another "flavor of the month" initiative that will pass with the others. I would like to suggest some of these "past fads" - reengineering, six sigma, total quality management, continuous process improvement, lean manufacturing, and a host of others - have NOT fallen by the wayside, but are rather the foundation on which we continue to evolve best practices in management and in business processes. I would also like to suggest that the critics, who claim this is nothing more than the "soft stuff" of interpersonal skills, are incorrect. Knowledge management is about business results.

Each new management initiative attempts to address some very real barriers to effective and efficient work-flows. Knowledge Management (KM) is no different - with the exception that it focuses on human capital. Businesses have merged into corporate giants, Lean Electronics/Lean Manufacturing concepts have removed waste from our companies, competition drives us to be better/faster/cheaper and become vertically integrated with our suppliers and customers, and new technologies make communication and knowledge capture less personal. As a result, we are left with fewer people having more work to do and less time to accomplish the tasks. From a "manufacturing" model, this might seem like a positive move toward productivity and higher profits, and to some extent, this is true. One repercussion with all of this, however, is that people are talking less and less to other people and without these human interactions, our human capital is diminishing.

Knowledge Management at Rockwell Collins is about linking people to people and people to information so that we can think together for better business results. Our KM strategy includes both a social component "Communities of Practice", as well as technical components of "Skills Locators" and a formal "Book of Knowledge". This presentation will provide an overview of our strategy and the lessons learned in implementing Knowledge Management in a technical community.

Biography

Lynette Freese is a Sr. Program Manager in Engineering Resource Management for Rockwell Collins where she leads the company's efforts to design and implement a Knowledge Management system focused primarily on leveraging the skills and capabilities of over 3,000 design engineers. She has worked in the KM field for three years, and is currently implementing both the people to people, social side of Communities of Practice and the people to information, IT side with corporate yellow pages and Collins practice databases.

Lynette has also developed and implemented a formal mentoring program, designed processes to enable career development planning for engineers, and assisted in the creation and staffing of non-technical, professional positions within engineering to offload engineers of non-technical tasks and improve productivity.

Her educational background includes an undergraduate degree in Accounting and an MBA, both from the University of Iowa. Lynette is also a Certified Public Accountant.

Contact Information
Lynette Freese
Sr. Program Manager
Rockwell Collins, Inc.
400 Collins Road NE
Cedar Rapids, IA 52498
Phone: 319-295-2376
Email: llfreese@rockwellcollins.com

Tony May - Rockwell Collins, Inc.

Abstract

DOORS (Dynamic Object Oriented Requirements System) can be used for top-level requirements allocation to not only hardware (HW) but also software (SW). DOORS tracing capability is from top-level, or customer-provided requirements to vendor-supplied requirement documents. Typically there are multiple vendor-supplied modules requirements documents which comprise system architecture. However, there is an approach which exactly replicates the paragraph structure of the customer document in order to eliminate the need for tracing altogether. Since there is exact replication of structure, there is no need for tracing. This makes the job of tracing simpler whether one performs the tracing by hand or by automated methods.

The top-level customer requirements contain both hardware and software aspects which the system engineer will want to allocate to lower levels. Complicated systems are realized through the divide and conquer method. The system engineer determines a system architecture using some methodology. Several hardware modules comprise the system architecture. Some of the hardware modules may contain one or more processing elements as well.

DOORS can be used to assign modules to each and every requirement “object” based on the system architecture. HW requirements are typically allocated to several HW entities or modules since it may take more than one module to implement any one specific requirement. Using the same allocation process, the requirements may also be assigned to software which resides on the processing elements within a module.

Microsoft Word is used to update requirements in DOORS from a customer change in requirements if in text or document format (from the Tools - Compare and Merge Documents pull-down menu in Word). The changes are manually placed into DOORS, one change at a time, based on the highlighted additions or strikeout deletions in a “Merged” document.

Use of DOORS offers nearly “living documentation” implementation. Through Lean practices, engineering can move from its use of hardcopies through encouraging entry level DOORS usage for all HW and SW engineers. The same engineers can enter proposed changes to their requirements in several methods. Top-level test requirements, qualification test procedures, and test procedures can be kept or created in DOORS as well as the requirements documents detailed above. The addition of a document called “Requirements Open Issues,” makes DOORS a tool which can satisfy many of the system engineer's needs as well as provide motivation to steer clear of conventional “tools.”

Biography

Tony May is a Senior Systems Engineer in the Government Systems business unit of Rockwell Collins, Inc. His experience includes creation of hardware and software for digital signal processing systems. He is currently involved in the Kill Vehicle (EKV) Program. Mr. May holds bachelor's degrees in electrical engineering and engineering physics from the U.S. Air Force Academy, and a master's degree in electrical engineering from North Dakota State University.

Contact Information
Tony May
Rockwell Collins, Inc.
400 Collins Road NE
Cedar Rapids, IA 52498-001
Phone: 319-295-2166
Email: afmay@collins.rockwell.com

Richard Bennett - Rockwell Collins, Inc.

Abstract

Process definition is not new at Rockwell Collins. Processes have been documented and repeatedly updated throughout the Rockwell Collins history. Process variations have existed due to the number of disciplines, Business Units, degree of adherence, level of senior management support, customer influence, etc. During the past several years Rockwell Collins has documented an enterprise level standard engineering process framework. The resulting Rockwell Collins Technical Consistent Process (RC-TCP) addresses the disciplines of Systems Engineering, Software Engineering, Hardware Engineering and Application Specific Integrated Circuits (ASIC) Engineering and is one of a suite of enterprise level processes that encompass the full business lifecycle.

This presentation will provide an overview of the RC-TCP, and describe the system's V-model development model that Collins used to describe the information flow of the RC-TCP.

Biography

Richard A. Bennett is currently a Principal Software Engineer with Rockwell Collins, Engineering and Technology - Consistent Process Department and is responsible for leading development of hardware, software, and Application Specific Integrated Circuits (ASIC) processes.

Richard has 20 years experience with government and industry, developing and evaluating systems/software, performing operational test and evaluation, managing projects, and assessing process compliance.

Richard earned a BSEE from Texas Tech University and an MSEE from the Air Force Institute of Technology.

Contact Information
Richard Bennett
Principal Software Engineer
Rockwell Collins, Inc.
400 Collins Road NE
Cedar Rapids, Iowa 52498
Phone: 319-295-7058
Email: rabennet@rockwellcollins.com

Leopold Lee - The MathWorks Inc
Michael A. Esposito - The MathWorks Inc

Abstract

To build the world's tallest building, The Petronas Twin Towers, in Kuala Lumpur, architects needed CAD tools to design, verify, and validate building structure before actually casting the foundations to ensure it would handle nature's physical stresses. Similarly, today's complex embedded systems require a new high-level engineering methodology for system design. R&D engineers and algorithm developers need to test and verify their algorithm early in the process, before handing specifications to hardware engineers for DSPs or FPGAs implementation.

This presentation will describe how engineers implementing a System-Level Design methodology can compare and determine key design parameters (e.g. selection of filter coefficients for the pulse-shaping filter in a software radio) early in the process to decide whether the implementation matches the spec, rather then waiting until a custom and expensive prototype is built late in the process. By employing a system-level approach, embedded designs can benefit from the dramatic improvements that have been made in DSP and FPGA hardware performance over the past few years.

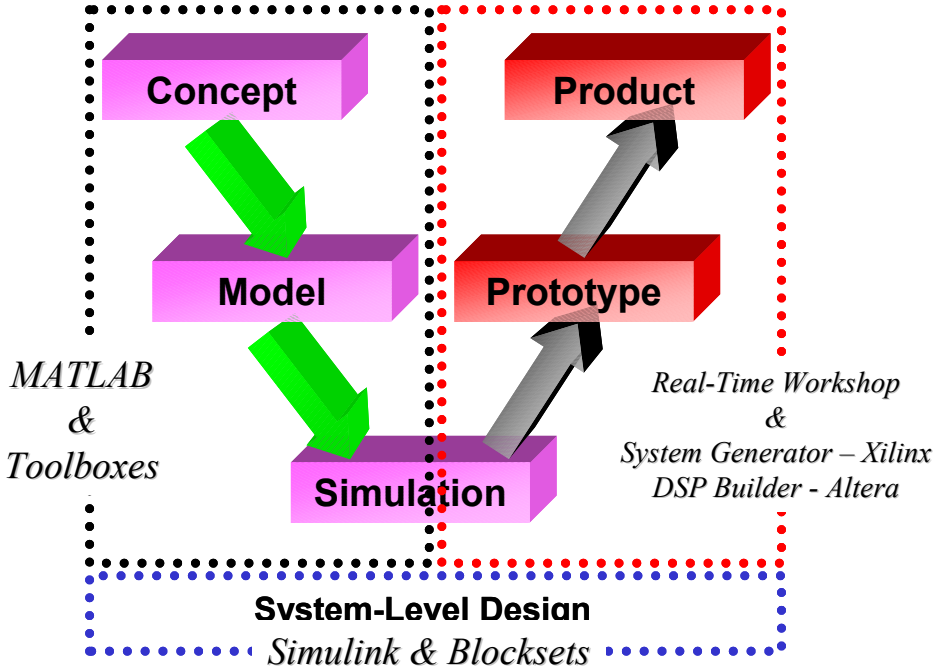


Figure 1.

The design V is ubiquitous in system engineering, but on the left side of the V (see Figure 1) the system designers are using different tools from the system implementers on the right side of the V. This presentation will demonstrate how Simulink can be used as the single System-Level Design tool for the whole V. Simulink bridges the gap between analysis (in MATLAB) and implementation (in C/C++, DSPs, FPGAs, etc.).

Leopold Lee - The MathWorks Inc
Michael A. Esposito - The MathWorks Inc

Biography

Leopold holds a B.S. in Engineering Science from the City University of New York and a M.S. in Electrical Engineering from Stanford University. Leopold previously worked for Raytheon Missile Systems in Tucson, AZ before joining The MathWorks in September 2000.

Contact Information
Leopold Lee and Michael A. Esposito
The MathWorks Inc
3 Apple Hill Drive
Natick, MA 01545
508-647-7848
Email: esposito@mathworks.com

Starting a Project Right: A Successful Requirements Gathering Methodology

Dawn Ainger-De Boer - Computing Solutions

Abstract

IT professionals are often frustrated by the fact that after working hard to deliver a quality project, users/customers seem to be less than satisfied with the result. Often times, this is because the needs and requirements of the customer were not adequately conveyed or understood. One of the best ways to have a successful project is to be able to clearly visualize and describe the end result before you even begin. This gives the development team the target to shoot for. This “target” is usually described in a functional specification or requirements document. The methodology for creating a functional specification is non-deterministic, and can therefore range from being incomplete to “gold-plated”. Learn how to create a functional specification or requirements document so that you know when you have documented all of the requirements and yet also eliminated the costly, “gold-plated” features. Learn how to track requirements from the requirements document, through development documentation, testing, and release. Learn how to integrate the requirements into a systems analysis and design.

Biography

Dawn Ainger-De Boer is the President and owner of Computing Solutions, Inc. (CSI) in Cedar Rapids Iowa. Dawn has both Bachelor's and Master's Degrees in Computer Science from the University of Iowa. She has 15 years experience in the computer industry. Dawn's background is in process improvement, requirements gathering and modeling, and object oriented design. She has also several years experience in application development. She is a member of IEEE, and is a Midwest Solutions Conference Chairman for IEEE. She is also a member of the Project Management Institute.

Contact Information
Dawn Ainger-De Boer
Computing Solutions
6005 Rockwell Drive NE
Cedar Rapids, IA 52402
Phone: 319-378-8455
Email: Dawn.ainger@csipros.com

Dr. Hans-Peter Hoffmann - I-Logix, Inc

Abstract

This talk gives a state-of-the-art overview of model-based systems engineering using classical structured-based and object-oriented (UML) methods. Special focus is put on requirements traceability and model verification/validation through model execution and formal methods.

Biography

Dr. Hoffmann has 22 years experience in the design and development of complex systems in the aerospace/defense industry (submarines, tanks, missiles and military aircraft) as well as in the automotive industry.

As Director of the Simulation Department of the Missile Division at MBB, Germany (later DASA/EADS) he developed a methodology-based approach for modeling and analysis of flight control systems - especially through Hardware-in-the-Loop simulation.

He worked internationally as a consultant for model-based system development in the aerospace, defense, and automotive industry. Since 1997 he is Director and Chief Methodologist for Systems Design at I-Logix, a leading Real-Time Object-Oriented and Structured Systems Design Automation tool vendor.

His focus here is methodology consulting ("From Concept to Code"):
- Definition / implementation of a customer specific model-based development process
- Tailoring the I-Logix' tool chain to the customer's development process
- Development of a tool deployment strategy
- Definition of model-based development standards, e.g.
- Modeling Guidelines
- Test strategies including formal verification
- Documentation
- Definition / development / implementation of an integrated tool environment

Recently, Peter Hoffmann developed the I-Logix "Integrated Process" which allows a seamless transition from the function-driven systems engineering process to an object-oriented (UML-based) software development.

Contact Information
Dr. Hans-Peter Hoffman
I-Logix, Inc
Director, Chief Methodologist for Systems Design
3 Riverside Drive
Andover, MA 01810
Phone: 978-645-3022
Fax: 978-682-5995
Email: peterh@ilogix.com

Joel Pech - Rational Software Corporation

Abstract

One universal challenge facing companies developing complex, software-intensive systems is how to share information between tools used for Systems Engineering and Software Engineering. The Eclipse Platform has emerged as an open source tool platform that allows tool developers to create plug-ins that provide engineering tool capabilities within the Eclipse shell. Any company or individual may download Eclipse and contribute to the Eclipse project by visiting www.eclipse.org. As of October 2002, about 175 tool vendors have developed and delivered tools based on the Eclipse Platform.
This demonstration will show the standard capabilities of the Eclipse shell, including the key user interfaces and the tool extension capabilities provided. In addition, some tool plug-ins will be demonstrated to show the integration capabilities provided by the Eclipse shell.

Biography

Joel Pech is a Software Engineering Specialist for Rational Software, a firm that specializes in developing systems/software engineering technologies. Upon graduation from Iowa State University with a B.S. in Computer Engineering, Joel worked for 10 years at Texas Instruments in Dallas, TX on airborne and man-portable infrared imaging tracking systems. Joel Pech has spent the past 12 years with Rational Software, working with customers on applying software engineering best practices and tools to address their systems/software development issues.

Contact Information
Joel Pech
Software Engineering Specialist
Rational Software Corporation
604 7th St.
Van Horne, IA 52346
Phone: 319-228-8781
Email: jpech@rational.com

Rational Software Corporation
18880 Homestead Rd.
Cupertino, CA 95014
Phone: 408-863-9900
Sales and product information hotline: 800-728-1212

Joel Pech - Rational Software Corporation

Abstract

Rational Rose Realtime is a model-based development environment expressly created to meet the unique challenges of real-time and embedded systems development. Rose Realtime provides a UML-compliant solution to problems such as concurrency and distribution and provides code generation, testing, and debugging features for a number of host platforms and real-time operating system targets.

Using Rational Rose Realtime, a Systems Engineer or Architect can model the architecture and design decisions using the UML and quickly build and execute the system on the host platform or on the target platform, if available. By dramatically reducing the time required to build and validate architectural decisions, Rational Rose Realtime provides the enabling technology for significant reduction in the cost and schedule for embedded systems development while significantly reducing the risk profile for the project.

This demonstration will show the use of Rational Rose Realtime to support model-based development. Included in the demonstration will be system specification, architecture modeling, automated code generation and model execution on the host (PC). Rational Test Realtime will be included in the demonstration to show the collection and analysis of model and code coverage information available when using Rational Rose Realtime.

Biography

Joel Pech is a Software Engineering Specialist for Rational Software, a firm that specializes in developing systems/software engineering technologies. Upon graduation from Iowa State University with a B.S. in Computer Engineering, Joel worked for 10 years at Texas Instruments in Dallas, TX on airborne and man-portable infrared imaging tracking systems. Joel Pech has spent the past 12 years with Rational Software, working with customers on applying software engineering best practices and tools to address their systems/software development issues.

Contact Information
Joel Pech
Software Engineering Specialist
Rational Software Corporation
604 7th St.
Van Horne, IA 52346
Phone: 319-228-8781
Email: jpech@rational.com

Rational Software Corporation
18880 Homestead Rd.
Cupertino, CA 95014
Phone: 408-863-9900
Sales and product information hotline: 800-728-1212

Jody Fluhr - Vitech Corp.

Abstract

Vitech Corporation provides business solutions that address your system development needs through the CORE(r) software product family and supporting services. Our proven system engineering and business process modeling product line enables better risk and contingency management for small single person projects and large multi-disciplinary engineering teams. The CORE environment synchronizes system requirements, behavioral models, architectures, and design solutions with system specifications, plans, and test procedures. Vitech's tools, techniques, and services enable our clients to define and manage system development projects in a manner that reduces risks and improves project outcomes. CORE provides an integrated environment that allows the user to develop, trace, manage, and store all aspects of the system engineering process.

CORE offers:
- Superior Requirements Management
- System Modeling and Simulation
- Architecture Analysis and Definition
- Complete System Traceability and Documentation
- Process maturity

Biography

Jody Fluhr joined the Vitech Corporation in 2001 and has supported numerous customers through his consulting and training. Upon graduation from the University of Louisville (Masters), Jody joined NASA at the Kennedy Space Center in Florida and served in various engineering capacities in the Space Shuttle and International Space Station programs. He left NASA to join Space Hardware Optimization Technology (SHOT), Inc. as a systems engineer and later served as project manager. Under his direction, SHOT selected CORE as the systems engineering tool of choice to perform their systems engineering efforts.

Contact Information
Jody H. Fluhr
Vitech Corporation
Senior Systems Engineering Consultant
Phone: 502-995-8895
Mobil: 502-494-8796

James Lawler - TychoMetrics - Predicate Logic

Abstract

This technical paper begins with a brief discussion of the trends in software measurement. Next, the six basic principles of MMT are introduced. These principles provide the building blocks for defining a measurement protocol. The paper proceeds discussing the static and dynamic measurement protocol. The paper concludes with producing an accurate report that is both consistent and repeatable.

Biography

Mr. Lawler founded Predicate Logic in 1992 and has grown the company to over $7 million. Prior to founding Predicate Logic, Mr. Lawler held management and technical positions in several companies including the Mitre Corporation and Jaycor. Mr. Lawler has 20+ years of professional experience developing and managing advanced software projects. Mr. Lawler holds a B.S. in mathematics from State University of New York and an M.S. in Astrophysics from Virginia Polytechnic Institute and State University. Mr. Lawler is a co-founder of the San Diego Defense and Space Technology Consortium, a high tech incubator for defense and space technology. Mr. Lawler is currently serving as a board member of the prestigious East County Economic Development Corporation, San Diego Regional Economic Development Corporation, and the San Diego Defense and Space Technology Consortium.

Contact Information
James M. Lawler
TychoMetrics - Predicate Logic
San Diego, California
9619 Chesapeake Dr.
Suite 200
San Diego, CA 92123
Phone: 858-715-0100

Jim Cook - Telelogic

Abstract

Writing requirements using a formal, text-based approach ensures they are well specified and this often forms the basis for a contract between the customer and supplier. However, natural language can be incomplete or misinterpreted. This often results in requirements that are conflicting or misunderstood, causing development projects to fail. A solution can be found in visualizing requirements as this facilitates collaboration, aids communication with customers and subcontractors, and helps provide an overview of the planned system. The Unified Modeling Language (UML) is a common, graphical notation much used by systems analysts and engineers. As such it is a widely known and easily understood notation that is ideal for visualizing requirements. This presentation shows how Tau/Architect supports UML 2.0, the next generation of UML, which is better suited for specifying system architecture and components. However, Tau/Architect takes requirements to the next level by enabling systems engineers to dynamically verify visual requirements without writing any code. Visualizing and validating requirements early can lead to significant productivity gains throughout the entire development process.

Biography

Jim Cook is District Manager for Telelogic NA. He has held sales management positions with a number of systems & software tools vendors. Prior to moving into sales he held a number of software development positions with private and public consulting firms. He has an M.B.A. from the University of Chicago.

Contact Information
Jim Cook
Telelogic
Phone: 847-483-9250 x510
Email: jim.cook@telelogic.com