

Project Performance International

Systems Engineering

Newsletter (SyEN)

SyEN #025 - October 29, 2010

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Dear Colleague,

SyEN is an independent free newsletter containing informative reading for the technical project professional, with scores of news and other items summarizing developments in the field, including related industry, month by month. This newsletter and a newsletter archive are also available at www.ppi-int.com.

Systems engineering can be thought of as the problem-independent, and solution/technology-independent, principles and methods related to the successful engineering of systems, to meet stakeholder requirements and maximize value delivered to stakeholders in accordance with their values.

If you are presently receiving this newsletter from an associate, you may receive the newsletter directly in future by signing up for this free service of PPI, using the form at www.ppi-int.com. If you do not wish to receive future SE eNewsletters, please reply to the notifying e-mail with "Remove" in the subject line, from the same email address. Your removal will be confirmed, by email.

We hope that you find this newsletter to be informative and useful. Please tell us what you think. Email to: contact@ppi-int.com.

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A Quotation to Open On

"A factor present in every successful project and absent in every unsuccessful project is sufficient attention to requirements." - Suzanne & James Robertson

Featured Article

The Great Divides in Systems Engineering

Dr. Joseph Kasser DSc, CEng, FIET, CM, CMALT
Joseph.kasser@incose.org
<http://therightrequirement.com>

Step outside systems engineering for a moment and look back into it. Range around the perspectives perimeter (Kasser, et al., 2009) and observe what you see from the different perspectives (Kasser and Mackley, 2008). I've been doing this for 15 years and have come up with and researched the following hard questions that nobody else seems to be tackling.

- **Why** is there no universal agreed-to definition of systems engineering?
- **Why** are there differing views on nature of systems engineering?
- **Why** are there dichotomies on how to tackle the problems posed by system of systems, and complex systems? One group states that they are difficult problems that cannot be solved with current techniques while the other group just gets on with it without a fuss.
- **Why** does systems engineering work well sometimes?
- **Why** does systems engineering fail miserably (and expensively) other times?
- **Why** is there no widely accepted body of knowledge for systems engineering?

From the generic systems thinking perspective, these types of questions tend to be posed by an observer looking into a discipline in its formative years. A discipline in this stage is characterized by

- debates based on subjective opinions
- participants talking past each other
- a lack of listening
- contradictory and confusing information
- a number of myths

If systems engineering itself is considered as a system, then the parts can be aggregated in several ways and the following divisions show up.

- Life cycle phase gap
- Process-problem paradigms gap
- Discipline-enabler paradigms gap
- Systems thinking and non-systems thinking gap

Consider each of these divisions

Life cycle phase

Some systems engineers seem to have an understanding of the early stage systems engineering that takes place in Column A of the Hitchins-Kasser-Massie Framework (HKMF) for understanding systems engineering (Kasser and Massie, 2001; Kasser, 2007b, a). The majority however have no idea that column A even exists and don't understand what happens in that column. The column A group tends to be the old timers; while the others tend to be those systems engineers educated in the last 20-30 years.

Process-problem paradigms

Some systems engineers are process-focussed others focus on identifying the correct problem and realizing the best solution achievable within the constraints that exist at the time. The process-focussed systems engineers' mantra is to apply the systems engineering process and all will be well. These are the ones who insist that organisations must modify themselves to follow a particular process. The others focus on the problem, identifying the best solution available given the constraints at the time and develop and then carry out a process to fit the situation.

Discipline-enabler paradigms

This is related to the process-problem gap. On one side, systems engineering is a [process] discipline, on the other side of the gap it's an enabler. The discipline camp preach that systems engineering needs to widen its span to take over other disciplines while in the enabler camp, systems engineering is just a tool that can be used in all disciplines for tackling certain types of problems.

Systems thinking and non-systems thinking

This gap represents the camps that look outwards from systems engineering and those that can see systems engineering from both inside and outside. Those that can see systems engineering from outside tend to be systems thinkers who can view an issue from multiple viewpoints while the insiders tend to have a single viewpoint. The insiders generally exhibit the 'biased jumper' level of critical thinking (Wolcott and Gray, 2003) at least as far as systems engineering is concerned and also belong in the process paradigm. The outsiders generally also belong in the enabler paradigm.

Discussion

Still with me? If you are then I have the following questions for you.

1. Are you aware of these divisions?
2. On which side of each of them are you?

Do you agree with this analysis? Let's hear from you on the INCOSE discussion reflector. If you want more information, check out the papers on my web site.

References

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3. Kasser, J. E., Hitchins, D. and Huynh, T. V., "Reengineering Systems Engineering", proceedings of the 3rd Annual Asia-Pacific Conference on Systems Engineering (APCOSE), Singapore, 2009.
4. Kasser, J. E. and Mackley, T., "Applying systems thinking and aligning it to systems engineering", proceedings of the 18th INCOSE International Symposium, Utrecht, Holland, 2008.
5. Kasser, J. E. and Massie, A., "A Framework for a Systems Engineering Body of Knowledge", proceedings of 11th International Symposium of the INCOSE, INCOSE, Melbourne, Australia, 2001.
6. Wolcott, S. K. and Gray, C. J., Assessing and Developing Critical Thinking Skills, 2003, http://www.wolcottlynch.com/Downloadable_Files/IUPUI%20Handout_031029.pdf, last accessed

Systems Engineering News

18th IEEE Requirements Engineering Conference (RE 2010)

By A Smit

RE 2010 took place from September 27 to October 1, 2010 in Sydney, Australia. When I was presented with the opportunity to attend this conference, I was more than happy to add one more continent to my list of overseas visits. The land down under has long been a favourite destination for many South Africans, many who have taken a one-way trip over the last two decades. Arriving in Sydney after a 12 hour plane trip, my only interest was to find the fastest transport and the shortest route to the hotel. After a good rest I donned my walking shoes and hit the road. What an experience! Sydney is indeed a beautiful city with lots of things to do and places to see. During my first two days I first did some scouting on the City Explorer bus tour and then, by foot, visited the Darling Harbour area, the Aquarium, the Foreshore Walk from Darling Harbour to Circular Quay, Circular Quay, the Botanical Gardens, the Opera House, various shopping centres (1st on the list was of course the Apple Store) and of course a harbour cruise. The start of the conference actually came as somewhat of a relief to my aching feet.



The conference started on Monday 27 September with four parallel tracks covering two workshops and four tutorials. On Tuesday another five workshops were presented in parallel tracks as well as another four tutorials in four parallel tracks. The last three days consisted of paper sessions and other special sessions as well as twelve very impressive and professional looking posters displayed in the hallway.

On Wednesday morning Mary O'Kane, NSW Chief Scientist and Engineer, gave the keynote on "*Requirements Engineering for Expensive Technologies Which need to Operate in Underconstrained Policy Systems that are Interdependent with National and Regional Economies*". She highlighted the special challenges facing large renewable energy projects a time of great uncertainty about policies on climate change and emissions control.

The keynote on Thursday morning was given by Professor Al Davis, University of Colorado at Colorado Springs, USA on "*Requirements: A Textbook Example of Goals Displacement*". He stressed that the goal of requirements engineering (or requirements management) is to increase the likelihood that the end product of the endeavour does in fact create value for stakeholders. Quoting from the abstract "Instead, we see displaced goals like: create a perfect software requirements specification (SRS); check an SRS for some combination of completeness, consistency, non-ambiguity, etc; automatically generate (or analyze) some formalized modelling notation; follow an onerous 20-step process; or automatically transform one modelling notation into another. Woefully few (although there are some terrific exceptions!) published papers connect the requirements process with its real goal: value creation."

The keynote at the closing plenary on Friday was given by Graeme Simson of Simson & Associates on "Being Right Isn't Enough". The key message was that the greatest challenges in practical requirements engineering are psychological and political rather than technical and that the requirements engineer is quite often also communicator, interpreter, facilitator, conciliator, negotiator, salesman and sometimes counsellor.

The social events associated with this conference were something to remember. Firstly the welcome reception took place at the Opera Bar at.....you guessed it, the Sydney Opera House. The conference banquet was an unforgettable harbour cruise dinner on the Blue Room departing from Star City Warf, Pyrmont.

Being the first IEEE RE conference that I attended, it was very apparent that the general attendance and the presentation of papers were predominantly from the software engineering industry. What was also surprising to see was the huge research component: nine research sessions presented compared to the five industry practice and experience sessions.

Current requirements engineering practices in my own environment were confirmed and renewed emphasis has been placed on spending enough time in doing RE and paying particular attention to requirements traceability. Some techniques that I want to investigate further is cognitive mapping and i* modelling. The most promising research papers were on automated requirements tracing and the most interesting were on linguistic analyses to improve requirements quality.



In a fitting conclusion to a wonderful trip, I visited the Blue Mountains on my last day in Australia. Having walked down the Furber steps into the Jamison Valley beside Katoomba Falls, the near vertical (so it felt) train trip back up was awe inspiring.

Sitting on the plane on the long trip back home, I could not help but wonder why requirements engineering still seems to be so much of a stumbling block for the successful execution of projects if there is so much research going on. Are we really making sure that we tailor the breadth and depth of the RE effort to only that which adds value to our particular project? Do we really devote enough time to the RE effort or are we pressured into a rushed completion of specifications in order to get hardware and software that we can show for our effort? Are we meticulous enough with the wording of requirements and with traceability? Most importantly, do we do enough to train young practitioners in the ABC of RE to fast track them on the road to becoming proficient requirements analysts?

And O! Does the INCOSE RE working group and the IEEE cooperate at all on RE?

Upcoming Submission Deadlines and Themes for INSIGHT

INSIGHT is the newsletter of International Council on Systems Engineering. It is published four times per year (January, April, July, October). INSIGHT features status and information about INCOSE's technical work, local chapters, and committees and boards. Additionally, related events, editorials, book reviews, trends, and how-to-do articles that are pertinent to the many

aspects of a systems engineer's job are also included, as space permits.

[Upcoming submission deadlines and themes for INSIGHT](#)

INCOSE eNote: News and Notes from the INCOSE Network

eNote is the electronic newsletter of INCOSE. Published every four to six weeks, eNote is a compilation of INCOSE news, event announcements, and items of interest for our members. Subscriptions to eNote are available to INCOSE members as part of their membership.

eNote features INCOSE information as well as notes from systems engineering and related fields. Questions and comments as well as submissions for future eNotes should be directed to the [eNote Editorial Team](#).

[More information](#)

Systems Engineering Certification Tutorial Webinar

Beginning Thursday, October 7th 2010 and running through April 2011, the tutorial consists of 16 weekly sessions, held from noon to 1:30 p.m., Eastern Time USA, for up to 300 INCOSE and 250 NGC participants. There is no need to pre-register and no cost, just join in. The LiveMeeting sessions will be open 30 minutes before the start time. Prior to each session, participants are encouraged to read the sections and appendices of the SE Handbook to be presented. Course materials include the course schedule, tutorial slides (including PowerPoint Notes), sample questions, and prior-session audio and video recordings for later downloading if you miss a class.

For more information go to the [INCOSE website](#).

INCOSE Event Calendar

German Chapter Annual Systems Engineering Conference (TdSE2010)	Nov 10 - 12, 2010
INCOSE UK Annual Systems Engineering Conference (ASEC 2010)	Nov 08 - 10, 2010
Cyber Security and Enterprise Architecture Conference hosted by Hampton Roads Area and ISSA-HR	Nov 03 - 04, 2010
15th Annual INCOSE Region II Fall Mini-Conference	Oct 30, 2010
First International Conference on Complex Systems Design and Management (CSDM 2010)	Oct 27 - 29, 2010

[More information](#)

Theme issue: Domain-Specific Modeling in Theory and Application

The Journal of Software and Systems Modeling (SoSyM) invites original, high-quality submissions for its theme issue on "Domain-Specific Modeling" that is focused on topics related to DSM.

[More information](#)

INCOSE INSIGHT - October 2010, Vol 13 - Issue 3

The October 2010 INSIGHT is ready to view or download on [INCOSE Connect](#).

Special Feature: INCOSE's Twentieth Anniversary International Symposium

CSER 2010 - Call for Papers

Call for Papers for CSER 2010 - **Conference on Systems Engineering Research**.

Abstracts due December 1 2010.

[More information](#)

New Multi-Million Pound Partnership Aims to Grow Systems Engineering Expertise in the Construction Industry

Imperial College London and Laing O'Rourke have formed a new multi-million pound partnership that is developing an MSc course to help construction industry professionals adopt world class systems engineering techniques, it is announced today.

The Imperial and Laing O'Rourke partnership will focus on innovation in the systems engineering field, which looks at how complex engineering projects are designed and managed. Laing O'Rourke is the largest privately-owned engineering enterprise in the UK.

[More information](#)

Featured Societies

Russian Institute for Systems Engineering (RISE)

RISE quotes on its website the Simon Ramo - a legend and inspiration as the R in TRW - definition of systems engineering: "Systems engineering is a discipline that concentrates on the design and application of the whole system as distinct from the parts. It involves looking at a problem in its entirety, taking into account all the facets and all the variables and relating the social to the technical aspect".

RISE goes on to say: "Designing and implementing complex industrial systems in today's environment is hardly imaginable without systems engineering. To support the construction of nuclear power plants, off-shore oil platforms, hydroelectric, aerospace and other complex systems, leading engineering companies and technical universities have developed efficient methods of life cycle management, requirements engineering, system architecture development, configuration and data management.

Systems Engineering of the XXI century goes through the stage of renovation that was caused by the increasing complexity of created systems and their requirements. As a result the systems engineering community has faced new challenges that require new approaches and further development of the existing methods and the system of standards, as well as upgrade in training and education of qualified personnel."

The objectives of the RISE are to provide a focal point for dissemination of systems engineering knowledge, and through its involvement to:

- promote collaboration in systems engineering education and research;
- assure the establishment of profession standards for integrity in the practice of systems engineering;
- improve the professional status of all persons engaged in the practice of systems engineering;
- encourage governmental and industrial support for research and educational programs that will improve the systems engineering process and its practice

RISE sponsored "Systems Engineering Challenges - International Workshop", RuSEC 2010, in Moscow, over 23–24 September, 2010. PPI participated in this workshop, but not by way of presenting. The Workshop program was:

- Petr Schedrovitsky - Challenges of Adoption of Systems Engineering as Applied Management Methodology
- Gennady Arkadov - Systems Engineering in VNIIAES
- Stanislav Shulepov - Systems Engineering of Shipbuilding Industry Parts Catalog
- Eduard Naumov - Russian Smart Grid System of Systems Engineering
- Victor Batovrin - Systems Engineering Education in a Global Environment
- Anatoly Levenchuk - Systems Engineering Challenges. Russian View.
- César González-Pérez - Creating and Using Model-Based Methods for Systems Engineering.
- Tyson Browning - Challenges and Tools for Integrative Modeling across a System's Life Cycle.
- Donald Firesmith - The Challenges of Engineering Safety and Security Requirements.
- Fedor Alexandrov, Irina Postolenco - Safety and security ontology in systems engineering
- Ian Alexander - Model-Based Requirements Discovery

- Victor Agroskin - Integration of High-level System Model, Cost Model, Environment Model and Life Cycle Model for Typical Design: Requirements Engineering and Architecture Options Definition Stage.
- Matthew West - Managing Systems' Lifecycle Data with ISO 15926
- Ian Glendinning - ISO15926 Reference Data – Readiness for Systems Engineering Use
- Hannu Niemistö - Simulation Model Integration in Systems Engineering Using Semantic Graphs. Semantics Experience and Roadmap.

A synopsis of each presentation is at the RISE website.

More information: <http://rise-russia.org/>

INCOSE Technical Operations

Verification and Validation Working Group

<http://www.incose.org/practice/techactivities/wg/vvwg/>

Charter

The BWG Charter is to promote practical application of systems engineering best practices and standards to the Verification and Validation Industry.

Leadership

Chair: Ben Mancuso

Co-Chair: Bram Landtsheer (Acting)

Contact Ben.Mancuso@incose.org for additional information or to join this group.

Published Products

- V&V Terminology (pending)
- AFIS V&V Overview

Planned Work

- Partnering with AFIS IVVQ WG
- Partner with Requirements WG
- Meeting Planned for April 2008
- Partner with Risk WG
- Partner with Lean SE WG

Presentations

 [2008 International Workshop Verification and Validation WG Summary Presentation](#) Size: 200K

Systems Engineering Software Tools News

Siemens PLM Software Launches Machine Design Solution

Siemens PLM Software is targeting manufacturers of machine tools and production machines with a new variation on its PLM platform that takes a systems engineering approach to facilitate design.

Mechatronics Concept Designer, based on the NX CAD software and Siemens Teamcenter PLM platform, delivers on the systems engineering approach by melding "voice of the customer" input and early requirements with a multi-discipline product definition that includes mechanical, electrical and software components.

[More information](#)

Systems Engineering Books, Reports, Articles and Papers

System-of-Systems Engineering

The focus of Carnegie Mellon Software Engineering Institute (SEI) research in this area is on the ways in which the characteristics of systems of systems call for a transformation of system-of-system engineering practices. In particular, we see that the successful development of complex systems of systems requires a new set of concepts, a revised set of life-cycle activities, attention to the role of emergence, and the application of a different set of technologies and techniques.

One life-cycle phase we are looking at is requirements engineering. Our investigation tells us that techniques and approaches for requirements engineering in a system-of-systems environment are not well understood because

- A system of systems is owned and evolved by different organizations.
- System-of-systems constituents are at different points in their life cycles.

[More information](#)

Conferences and Meetings

NDIA 13th Annual Systems Engineering Conference

October 25-28, 2010, Hyatt Regency Mission Bay, San Diego, CA, USA

[More information](#)

Requirements Days 2010

October 26 – 28, 2010, München, Germany

[More information](#)

2010 Huntsville Simulation Conference (HSC2010)

October 26-28, 2010, Huntsville Marriott, Huntsville, Alabama, USA

[More information](#)

5th International Workshop on Enterprise Integration, Interoperability and Networking (EI2N'2010)

October 27-28, 2010, Hersonissou, Crete, Greece

[More information](#)

Complex Systems Design & Management 2010

October 27-29, 2010, Paris, France

[More Information](#)

15th Annual INCOSE Region II Fall Mini-Conference

October 30, 2010, National University - La Jolla Campus, San Diego, CA, USA

[More information](#)

12th IEEE International High Assurance Systems Engineering Symposium (HASE 2010)

Co-Located with the 21st IEEE International Symposium on Software Reliability Engineering (ISSRE)

November 1-4, 2010, San Jose, CA, USA

[More information](#)

29th International Conference on Conceptual Modeling

1-4 November 2010, Vancouver, BC, Canada

[More information](#)

Seventh International Workshop on Web Information Systems Modeling (WISM 2010)

(Held in conjunction with ER 2010)

November 1-4, 2010, Vancouver, BC, Canada

[More information](#)

25th International Forum on COCOMO and Systems/Software Cost Modeling

November 2-5, 2010, University of Southern California, Los Angeles, CA, USA

[More information](#)

2010 IITA International Conference on Control, Automation and Systems Engineering (CASE 2010)

Nov 7, 2010 - Nov 8, 2010. Taipei, Taiwan

[More information](#)

No Magic World Conference

November 7-10th, 2010, American Airlines Conference Center, Fort Worth, TX

[More information](#)

INCOSE UK Annual Systems Engineering Conference 2010 (ASEC10)

November 8-10, 2010, Heythrop Park Hotel, Chipping Norton, Oxfordshire, UK

[More information](#)

13th Brazilian Symposium on Formal Methods (SBMF 2010)

November 8th - 12th, Natal, Brazil

[More information](#)

SEPG Latin America 2010

November 10-12, 2010, Medellín, Colombia

[More information](#)

Association for the Advancement of Artificial Intelligence (AAAI) Fall Symposium: Complex Adaptive Systems: Resilience, Robustness, and Evolvability

November 11 - 13, 2010, Arlington, VA

[More information](#)

5th Trends in Enterprise Architecture Research (TEAR2010) workshop

November 12, 2010 as part of the Enterprise Engineering Week at the Delft University of Technology, Delft, The Netherlands from the 9th of November to the 12th of November

[More information](#)

CMMI 10th Annual Technology Conference and User Group

November 15-18, 2010

Hyatt Regency Tech Center – Denver, Colorado, USA

[More information](#)

Third IEEE International workshop UML and Formal Methods

Held in conjunction with the 12th International Conference on Formal Engineering Methods, ICFEM 2010

November 16th, 2010, Shanghai, China

[More information](#)

5th International Forum on Engineering Education (IFEE2010) & European SDPROMO II Conference

November 23 - 25, 2010, Sharjah-Dubai, UAE, United Arab Emirates

[More information](#)

1st International Chemical and Environmental Engineering Conference 2010

November 26 - 28, 2010, Kuala Lumpur, Malaysia

[More information](#)

2010 International Conference on Computer and Software Modeling - (ICCSM 2010)

December 4-5, 2010, Manila, Philippines

[More information](#)

22nd International Conference Software & Systems Engineering and their Applications (ICSSEA 2010)

December 7-9, 2010, Paris, France

[More information](#)

National Institute of Technology – National Systems Conference 2010

December 10-12, 2010, National Institute Technology Karnataka, Surathkal, India

[More information](#)

ICISE 2010: International Conference on Intelligent Systems Engineering

December 18, 2010, Bangkok, Thailand

[More information](#)

ICECSE 2011 "International Conference on Electrical, Computer and Systems Engineering"

January 25-27, 2011, Dubai, United Arab Emirates

[More information](#)

INCOSE International Workshop 2011 (IW 2011)  **NEW**

January 29 - February 01, 2011, Hyatt Regency Phoenix, Phoenix, AZ, USA

Second International Conference on Exploring Services Sciences (IESS 1.1)

February 16-17-18, 2011, Geneva, Switzerland

[More information](#)

Second ACM/SPEC International Conference on Performance Engineering (ICPE 2011)

March 14-16, 2011 Karlsruhe, Germany

[More information](#)

Design, Automation & Test in Europe

March 14-18, 2011, Grenoble, France

[More information](#)

26th Symposium On Applied Computing

March 21 - 25, 2011, Tunghai University, TaiChung, Taiwan

[More information](#)

Requirements Engineering Track – 4th Edition

part of the 26th ACM Symposium on Applied Computing

March 21 - 25, 2011, Tunghai University, TaiChung, Taiwan

[More information](#)

Requirements And Validation, Verification & Testing (ReVVerT 2011)  **NEW**

March 21-25, 2011 (one day), Berlin, Germany

[More information](#)

IWEI 2011 - The International Working Conference on Enterprise Interoperability

March 22-24, 2011, Stockholm, Sweden

[More information](#)

MoBE-RTES 2011 - 2nd IEEE Workshop on Model-based Engineering for Real-Time Embedded Systems

Mar 28, 2011

[More information](#)

REFSQ 2011 - 17th International Working Conference on Requirements Engineering: Foundation for Software Quality

March 28-30, 2011, Essen, Germany

[More information](#)

MBT 2011 - Seventh Workshop on Model-Based Testing 

April 2-3, 2011, Saarbrücken, Germany

Satellite workshop of ETAPS 2011

[More information](#)

IEEE International Systems Conference

April 4-7, 2011, Montreal, Quebec, Canada

[More information](#)

CSER 2011 - Conference on Systems Engineering Research 

April 14-16 2011, Redondo Beach Crown Plaza, Redondo Beach, CA, USA

[More information](#)

Risk-Based Approaches to Major Decisions (Risk '11)

May 13 - 14, 2011, Falmouth, Cornwall, United Kingdom

[More information](#)

SPICE 2011 - The 11th International SPICE Conference Process Improvement and Capability dEtermination 

30 May - 1 June 2011, Dublin, Ireland

[More information](#)

Seventh European Conference on Modelling Foundations and Applications 

6-9th of June, 2011, University of Birmingham, Birmingham, UK

[More information](#)

10th TTCN-3 User Conference 

June 7-9, 2011, Bled, Slovenia

[More information](#)

4th Symposium on Resilience Engineering 

June 8-10, 2011, Sophia Antipolis, France

[More information](#)

FM 2011: 17th International Symposium on Formal Methods

June 20 - 24, 2011, Lero, Limerick, Ireland

[More information](#)

The 32nd International Conference on Application and Theory of Petri Nets and Concurrency (PETRI NETS 2011)

11th International Conference on Application of Concurrency to System Design (ACSD 2011)

June 20-24, 2011 Kanazawa Cultural Hall, Kanazawa, Japan

[More information](#)

INES 2011 - 15th IEEE International Conference on Intelligent Engineering Systems 2011

June 23-25, 2011, Poprad, High Tatras, Slovakia

[More information](#)

SoSE 2011 - 2011 6th International Conference on System of Systems Engineering (SoSE)

Jun 27 - 30, 2011, [Albuquerque](#), New Mexico, [U.S.A](#)

[More information](#)

19th IEEE International Requirements Engineering Conference

August 29 – September 2, 2010, Trento, Italy

[More information](#)

Education & Academia

Two Research Fellow Positions on Model Checking at National University of Singapore

Highly motivated applicants are being sought to work on developing model checking techniques. The postdocs will work with the software engineering and formal methods group at National University of Singapore on further developing the PAT toolkit (<http://pat.comp.nus.edu.sg>).

[More information](#)

Some Systems Engineering-Relevant Websites

<http://www.lean6.org/>

This is the website of the The Lean Six Sigma Professionals' Association, established to provide efficient, expert solutions to practitioners in the Lean Six Sigma community. Primary services include providing information and resources to its members. The association contributes to the Lean Six Sigma's evolving body of knowledge.

<http://www.isspp.com/>

This is the website of the International Society of Six Sigma Professionals (ISSPP). The ISSPP global community includes corporate and affiliate participants, and individual members representing large and small businesses from a wide variety of industries.

http://www.isixsigma.com/index.php?option=com_glossary

This commercial website contains a useful glossary of (presently) 686 Six Sigma terms.

<http://asq.org/sixsigma/>

A web-based, multi-faceted membership, the ASQ Six Sigma Forum offers informal and practical opportunities for Six Sigma professionals at any experience level to share knowledge and solutions. The Six Sigma Forum was started in May 2001 and now has 18,047 members.

<http://iassc.org/>

This is the website of the International Association for Six Sigma Certification (IASSC) The IASSC claims to be the only independent third-party certification association in the Lean Six Sigma industry providing Professional Credentialing. IASSC is committed to growing and enhancing the Lean Six Sigma profession by recognizing professionally qualified individuals through standardized certification testing.

Standards and Guides

ISO/IEC JTC 1/SC7 Interim Meeting

Registration is now open for the interim meeting at https://www.fbcinc.com/nist_ISOSC7/atreg1.aspx

It is essential that all participants register at least four weeks before the meeting date: The deadline for registration is Monday, October 4, 2010. Advance registration is required for all participants, both US and non-US. Unregistered persons arriving at NIST cannot be admitted.

[More information](#)

Some Definitions to Close On

Semantics and Syntax

Semantics

Semantics: the study of meanings:

a: the historical and psychological study and the classification of changes in the signification of words or forms viewed as factors in linguistic development

b: a branch of semiotic dealing with the relations between signs and what they refer to and including theories of denotation, extension, naming, and truth.

Source: *Merriam-Webster Dictionary*

Semantics:

1. The study or science of meaning in language.
2. The study of relationships between signs and symbols and what they represent. Also called semasiology.
3. The meaning or the interpretation of a word, sentence, or other language form.

Source: www.thefreedictionary.com

Semantics: Semantics is the study of meaning. It typically focuses on the relation between signifiers, such as words, phrases, signs and symbols, and what they stand for. Linguistic semantics is the study of meanings that humans use language to express. Other forms of semantics include the semantics of programming languages, formal logics, and semiotics.

Source: <http://en.wikipedia.org>

Syntax

Syntax: the way in which linguistic elements (as words) are put together to form constituents (as phrases or clauses)

Source: *Merriam-Webster Dictionary*

Syntax:

- a. The study of the rules whereby words or other elements of sentence structure are combined to form grammatical sentences.
- b. The pattern of formation of sentences or phrases in a language.
- c. The rules governing the formation of statements in a programming language.
- d. The grammatical principles by which words are used in phrases and sentences to construct meaningful combinations

Source: www.thefreedictionary.com

Syntax:

- a. the study of the rules for the formation of grammatical sentences in a language.
- b. the study of the patterns of formation of sentences and phrases from words.

- c. the rules or patterns so studied: English syntax.
- d. a presentation of these: a syntax of English.
- e. an instance of these: the syntax of a sentence.
- f. that branch of modern logic that studies the various kinds of signs that occur in a system and the possible arrangements of those signs, complete abstraction being made of the meaning of the signs.
- g. a system or orderly arrangement.
- h. the grammatical rules and structural patterns governing the ordered use of appropriate words and symbols for issuing commands, writing code, etc., in a particular software application or programming language.

Source: <http://dictionary.reference.com/>

Project Performance International News

PPI Introduces New 1-Day Overview Seminars

PPI has introduced the following new seminars, for public and on-site delivery, worldwide:

- Introduction to Cognitive Systems Engineering
- Introduction to Requirements Analysis
- Preparing Great Requirements Specifications

See www.ppi-int.com for more information.

PPI Introduces Training in Integrated Product Teams

PPI has introduced the following new courses and services related to Integrated Product Teams:

- Integrated Product Teams Executive Overview (2 hours)
- Integrated Product Teams – 2 days, for public and on-site delivery
- Integrated Product Teams – 3 days, for on-site delivery
- Integrated Product Teams training and facilitation – 4 days, for on-site delivery

See www.ppi-int.com for more information.

PPI Introduces Executive Briefings

PPI has introduced the following new Briefings, for-site delivery, worldwide:

- The Business Case for Systems Engineering (2 hours)
 - Systems Engineering Overview (2 hours)
 - The Business Case for Better Requirements (2 hours)
 - Requirements Analysis Overview (2 hours)
 - Integrated Product Teams (2 hours)
-

Project Performance International Events

Systems Engineering 5-Day Course

Upcoming locations include:

- London, UK
- Stellenbosch, South Africa
- Amsterdam, The Netherlands
- Las Vegas, USA
- São José dos Campos, Brazil

[View 2010/2011 Systems Engineering Course Schedule](#)

Requirements Analysis and Specification Writing 5-Day Course

Upcoming locations include:

- Melbourne, Australia
- Amsterdam, The Netherlands
- Las Vegas, USA
- Adelaide, Australia

[View 2010/2011 RA&SW Course Schedule](#)

OCD & CONOPS in Capability Development 5-Day Course

Upcoming locations include:

- Adelaide, Australia
- Las Vegas, USA
- Pretoria, South Africa
- Canberra, Australia
- Brasilia, Brazil

[View 2010/2011 OCD/CONOPS Course Schedule](#)

Software Development Principles & Processes 5-Day Course

Upcoming locations include:

- Pretoria, South Africa
- Sydney, Australia

[View 2011 Software Development Principles & Processes Course Schedule](#)

Cognitive Systems Engineering 5-Day Course

Upcoming locations include:

- Adelaide, Australia

[View 2010/2011 Cognitive Systems Engineering Course Schedule](#)

Requirements Engineering 4-Day Course

Upcoming locations include:

- São José dos Campos, Brazil

[View 2011 Requirements Engineering Course Schedule](#)

IT Project Management Principles & Processes 3-Day Course

Upcoming locations include:

- Melbourne, Australia

[View 2010 IT Project Management Principles & Processes Course Schedule](#)

Introduction to Software Development Principles & Processes 2-Day Seminar

Upcoming locations include:

- Melbourne, Australia
- Sydney, Australia

[View 2011 Introduction to Software Development Principles & Processes Seminar Schedule](#)

Introduction to Requirements Analysis 1-Day Seminar

Upcoming locations include:

- Sydney, Australia
- Wellington, New Zealand

[View 2011 Introduction to Requirements Analysis Seminar Schedule](#)

Preparing Great Requirements Specifications 1-Day Seminar

Upcoming locations include:

- Sydney, Australia
- Wellington, New Zealand

[View 2011 Preparing Great Requirements Specifications Seminar Schedule](#)

PPI Upcoming Participation in Professional Conferences

- October 25 - 28, 2010 - **NDIA SE Conference** - San Diego, CA, USA (Exhibiting)
 - November 15 - 19, 2010 - **Land Warfare Conference** - Brisbane, Australia (Exhibiting)
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